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ABSTRACT

The Council for Postsecondary Education conducted this study of initial teacher preparation programs in the State of Washington in order to provide a solid factual basis for assessing those programs and the wide variety of recommendations about them that have been made recently. While, on the whole, the Council's study has shown the state's initial teacher preparation to be in relatively good order, some specific concerns have emerged from this study. Findings and policy recommendations are presented relating to the following topics: (1) admissions and exit requirements for teacher preparation programs; (2) minority students; (3) majors for elementary certification; (4) subject matter for secondary teachers; (5) extended field work and 5-year programs; (6) the current state certification system; (7) teacher preparation program approval; (8) characteristics of first teacher certificate completers; and (9) changes in certification standards. (JD)

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Council for Postsecondary Education
State of Washington

A Study of Initial Teacher Preparation in Washington

May, 1985

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STATE OF WASHINGTON

COUNCIL FOR POSTSECONDARY EDUCATION

A Study of Initial Teacher Preparation in Washington

April, 1985

Prepared by:

Barry L. Bull

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PREFACE

Teacher preparation has been one major focal point in the recent national and state educational reform movement. In Washington, teacher preparation has figured prominently in the recent deliberations of most statewide educational and public policy organizations. In the past two years, these organizations have taken a variety of sometimes conflicting and sometimes converging positions on this important subject. And in 1983, the Washington Legislature requested the Council for Postsecondary Education to report on the current status of teacher preparation in the state.

Against this background, the Council initiated in 1984 a comprehensive, empirical study of the state certification system, existing initial teacher preparation programs, and the graduates of those programs. This document brings together the results of this study. It is a compilation of reports released from December, 1984 until March, 1985.

ACKNOWLEDGEMENTS

As the text indicates, this study was possible only because of the cooperation of many individuals in a variety of institutions and agencies. In particular, Council staff is grateful to the directors and staffs of:

> The education colleges and departments of the sixteen institutions of higher education with initial teacher preparation programs.
>
> The certification, institutional research, placement, and registrar's offices at the five public universities.
>
> The Office of the Superintendent of Public Instruction's Certification and Professional Education Sections.
>
> The Washington Council of Deans and Directors of Education.
>
> The Washington Pre-College Testing Program.
>
> The Educational Assessment Center at the University of Washington.

Many Council support staff were involved in the timely and accurate completion of the study. Special thanks go to Tom Jons and Brad Hoza for managing the data on program completers and to Debbie Cline and Catherine Dixon for their meticulous preparation of the tables and text.

I. Council Policies on Initial Teacher Preparation

The Council for Postsecondary Education has conducted this study of initial teacher preparation programs in Washington in order to provide a solid factual basis for assessing those programs and the wide variety of recommendations about them that have been made recently.

On the whole, the Council's study has shown the state's initial teacher preparation system to be in relatively good order: The State Board of Education has actively enforced its program standards; the institutions' programs are reasonably demanding of students, and the students produced by the programs appear as a group to be academically competent.

Nevertheless, some specific concerns have emerged from this study. The following findings and policies, which were adopted by the Council on February 28, 1985, address these concerns about the preservice preparation of teachers and focus specifically on the responsibilities of institutions of higher education. They are based to the greatest extent possible on actual facts about the current programs and their demonstrated effects. This policy has been transmitted to the State Board of Education and the teacher preparation institutions. Council staff will monitor its implementation and will report periodically to the Council as appropriate action is taken.

Issue 1: Admission Standards for Teacher Preparation Programs

- *The Council for Postsecondary Education supports the minimum entrance standards established by the State Board of Education.*
- *The Council for Postsecondary Education recommends that institutions adopt admission standards above these minimums based on evidence about the effects and appropriateness of the standards. These standards should include evidence of basic skills achievement beyond mere test scores.*

Findings:

A. The State Board of Education has recently required all approved programs to establish a minimum college grade point average and a minimum total verbal and quantitative test score of 80 on the Washington Pre-College Test as requirements for admission.

B. All 16 institutions with approved programs currently have college gpa requirements for admission to teacher preparation that are above the institutions' own requirements for graduation. All 16 require students to pass a test in English. Fourteen require students to pass a test in mathematics.

C. Admissions requirements to teacher preparation have increased in at least three-fourths of the institutions in the past five years.

D. These requirements appear to be selecting a reasonably academically able group of students into teaching. In the public universities in 1982-83, certificate earners' average college gpa's were above those of all graduates. Their average WPCT verbal and quantitative test scores were above those of all test-takers.

E. The Temporary Committee on Educational Policies, Structure and Management has recommended requiring WPCT test scores at or above the 50th percentile and a college gpa at or above the institution's average for all students. An estimated 65 percent of the certificate earners at public universities in 1982-83 would have been excluded by these requirements, including almost half of the students whose college gpa's were above their institutions' all-graduate gpa. An estimated 91 percent of all minority certificate earners would have been excluded, including over three-fourths of the minorities with gpa's above the all-graduate averages.

F. The Education Deans' Task Force formed by the Interinstitutional Committee of Academic Officers has called for institutional standards similar to those recommended by the Temporary Committee.

G. Research completed at the University of Washington's Teacher Education Research Center in 1983 was unable to find any significant relationship between basic skills test scores and performance in student teaching (Roger Olstad et al., "Preservice Teaching Performance: A Search for Predictor Variables," Research Report No. 83-3).

H. There is evidence that the Washington Pre-College Test systematically underpredicts the actual academic performance of teaching certificate completers.

Issue 2: Program Exit Requirements

- *The Council for Postsecondary Education supports the State Board of Education's approach to the development and implementation of program exit requirements.*

- *The Council for Postsecondary Education recommends that the State Board of Education require institutions of higher education in cooperation with the program units to develop systematic, comprehensive assessments of students' knowledge of subject matter as a requirement for program completion.*

Findings:

A. Fifteen of the 16 institutions have formal mechanisms for monitoring the progress of certification candidates once they have been admitted to the programs. Eleven require a minimum overall college grade point; nine require minimum grades or grade point average in the major; twelve require minimum grades or grade point average in required education courses.

B. All institutions have some formal mechanism for evaluating student teaching which focuses on the state-mandated generic competencies.

C. The State Board of Education has recently authorized and asked the Legislature to fund the development and field testing of a Washington Teachers Examination. This examination would consist of a written test of knowledge relevant to the generic standards and a uniform observational evaluation instrument for student teaching. If the field test shows that these instruments are appropriate to the evaluation of prospective teachers, the State Board intends to mandate their use as part of all institutions' exit requirements.

D. The Temporary Committee, the Washington Business Roundtable, and many other groups have endorsed this examination.

E. The written part of the Washington Teachers Examination will include a single test of knowledge of teaching based on the 11 generic competencies which relate specifically to teaching.

F. In testing for the remaining generic standard, which requires students to be knowledgeable in their fields of instruction, the State Board has at least three options:

Issue 2: Program Exit Requirements
(Continued)

1. The Board may develop such subject matter tests themselves. This would require the development and maintenance of at least 25 different standardized tests, an enormously expensive and complicated undertaking.
2. The Board may utilize existing, nationally normed standardized achievement tests, such as the NTE Specialty Area Tests. These tests have a documented bias against minorities. The relationship between the content of these tests, the curriculum of Washington schools, and the content of the majors at Washington colleges and universities is unknown. Moreover, these tests cannot evaluate certain central aspects of subject matter knowledge, such as performance skills for music majors or laboratory skills for science majors.
3. The Board may require institutions to design and administer rigorous, comprehensive assessments of students' subject matter competence based on the content of school and university curricula. These assessments may include a variety of elements ranging from written examinations to senior projects and may be tailored to the specific skills and knowledge required.

Issue 3: Representation of Minorities in Teacher Preparation Programs

- *The Council for Postsecondary Education recommends that the State Board of Education and the institutions should intensify efforts to recruit qualified minority students into teacher preparation programs. To support these efforts, state incentives should be explored.*
- *The Council for Postsecondary Education recommends that the State Board of Education initiate efforts to make minority students in the schools more aware of the career opportunities in education which are currently available.*
- *The Council for Postsecondary Education supports the recommendation of the Temporary Committee and the Education Campaign that the State Board of Education and the institutions should review and strengthen when necessary current programs' provisions for meeting the Board's generic competency in multicultural and multiethnic education.*

Findings:

A. Fewer than 5 percent of the teachers prepared in 1982-83 at the public universities were minorities. Almost 9 percent of the state university recipients of bachelor's degrees and 14 percent of Washington school children are minorities.

B. There is evidence that this is a national phenomenon. While 4.9 percent of white Scholastic Aptitude Test takers in 1983 indicated education as their first choice for a college major, only 3.5 percent of minorities did so.

C. The State Board of Education has included a generic competency in multicultural and multiethnic education in its outcome standards for approved teacher preparation programs. The satisfaction of this requirement may be imperative given the relative shortage of minority teachers.

Issue 4: Majors for Elementary Certification

- *The Council for Postsecondary Education recommends that the State Board of Education and the institutions seek ways to diversify the majors of elementary certification candidates, including, perhaps, reducing the numbers of education-related fields in which students may major, limiting enrollments in education-related majors, raising admission standards to education-related majors, intensified recruitment of elementary teachers among majors in other departments, specially designed programs that permit bachelor's degree holders in other fields to prepare as elementary teachers in a reasonable period of time, or loan forgiveness programs for students in specific non-education majors who prepare and serve as elementary teachers.*

Findings:

A. A preponderance of elementary teachers at the five public universities in 1982-83 majored in one of four education-related fields--elementary education, special education, early childhood education, or reading.

B. A small proportion of elementary teachers majored in the basic teaching subjects--13 percent in social science, 5 percent in English, and less than 2 percent each in natural science and mathematics.

C. The Temporary Committee has recommended that all certification candidates be required to complete a subject-matter major and additional work in a second academic field. This recommendation recognizes that elementary students may benefit from instruction by teachers with a command of these basic subjects but fails to acknowledge that such students may also benefit from contact with teachers who have a strong background in reading or child development, for example. The problem appears to be more a lack of diversity in the academic backgrounds of elementary teachers than that some teachers have professionally oriented backgrounds.

D. The Education Deans' Task Force has proposed that elementary teachers be required to have a subject matter major which may include an interdisciplinary major of 60 quarter hours in two basic school subjects.

Issue 5: Subject Matter Preparation for Secondary Teachers

- *The Council for Postsecondary Education recommends that the State Board of Education reassess and more rigorously define its requirements for supporting endorsements.*
- *The Council for Postsecondary Education recommends that teachers granted supporting secondary school endorsements be required to pass their institutions' comprehensive subject matter assessments. This policy may necessitate a two-tiered assessment system, one assessment that all endorsed students must pass and an additional assessment for majors.*

Findings:

A. Although there is some variation among institutions, the course work required for majors appears to be reasonably extensive and demanding.

B. Requirements for supporting endorsements at some institutions appear to be minimal in both quantity and level of preparation.

C. Some students are endorsed for completing the minimum required course work, in some cases as little as 20 quarter hours.

D. Because the State Board of Education requires initial and new continuing certificate holders to be assigned in their fields of endorsement, the demand for supporting endorsements may increase considerably.

Issue 6: Extended Field Work

- *The Council for Postsecondary Education recommends that the State Board of Education and the institutions implement extended field experience models for all students preparing for teacher certification. Extended field experience should be defined broadly enough to encourage institutions to tailor their programs to the needs of their students and the strengths of their faculties and to respond to contemporary research on teacher preparation.*
- *The Council for Postsecondary Education recommends that, in implementing these extended field experience models, institutions should explore alternatives to enhance student supervision.*

Findings:

A. The State Board of Education currently requires approved programs to include a sequence of planned field work assignments culminating in a minimum of eight weeks of student teaching.

B. Student teaching at all public universities except Washington State University exceeds the State Board minimum.

C. All public university programs except Western Washington's campus-based option require students to spend a reasonable amount of time in the field before they enter student teaching, at least 75 hours.

D. Four universities currently operate extended field experience programs in which students are assigned at least half time in the field for one or more quarters prior to full-time student teaching. These programs are options at Central and Western Washington Universities; they are mandatory at Seattle Pacific University and the University of Washington.

E. The amount of field experience that students in these extended programs accrue is significantly greater than that gained by students in other programs--almost 200 hours more on the average.

F. Research at the University of Washington has demonstrated that students in the University's current field-based program received higher evaluations of teaching competence both during student teaching and at the end of their first year of paid experience than did students in the University's previously available campus-based program. (Jack Beal and Norma Dimmitt, "A Comparison of Participant Performance and Attitudes in Two Teacher Prepartion Patterns," University of Washington College of Education, 1975.)

G. This research suggests the general superiority of significantly extended field work programs but does not establish a specific optimum length or configuration for that extended field work. These are issues that have not yet been settled by research.

H. The Temporary Committee has recommended that teacher preparation programs include supervised clinical experience equal to at least two quarters of academic credit. The requirement of a specific amount of academic credit for field work may discourage institutions from offering courses which combine field experience with academic study and may conflict with some independent institutions' regulations about the granting of academic credit.

I. The Education Deans' Task Force has called for "multiple, extended, and integrated field experiences which are started early, are diverse and are continuous" in addition to at least ten weeks of student teaching.

J. The implementation of more field work would place additional demands on institutions' current arrangements for field supervision. Individually, and as the ICAO Task Force, the public university Education Deans have expressed the need to reexamine and improve field supervision. The Temporary Committee has recommended a reduced student-faculty ratio for university faculty involved in supervision.

Issue 7: Mandatory Five-Year or Postgraduate Preparation Programs

- *The Council for Postsecondary Education supports the Washington Business Roundtable's recommendation against mandating increased teacher preparation program length. At the same time, the Council encourages individual institutions to consider graduate-level preparation programs as one possible way to improve teacher education.*

Findings:

A. The State Board of Education currently requires at least a bachelor's degree for initial teacher certification and an additional year of college work for continuing certification.

B. Actual minimum initial certification program requirements--including major, minor, distribution, and professional education requirements--total on average about 90 percent of the minimum college credits required for the bachelor's degree.

C. On the average, initial elementary certificate earners at the five public universities in 1982-83 completed the equivalent of two-and-a-half quarters and initial secondary certificate earners completed three-and-a-half quarters of college work beyond the minimum requirements for the bachelor's degree.

D. The State Board of Education's Professional Education Advisory Committee and the Washington Business Roundtable have recommended against mandating five-year or postgraduate programs. In particular, the Roundtable expressed concern that such requirements might discourage college students from preparing as teachers and might limit entry into teaching by individuals with initial degrees in other fields.

E. The Temporary Committee has withdrawn their interim recommendation for a five-year initial preparation program as a result in large part of testimony from expert witnesses, including Dr. William Katz, Dean of Eastern Washington University's School of Human Learning and Development. In his testimony, Dr. Katz emphasized that the question of program length is secondary to those of program appropriateness and quality. He suggested that artificial time constraints on preparation programs could be unfair to the most motivated and capable students who may be able to meet the institutions' and the state's standards in fewer than five years.

Issue 7: Mandatory Five-Year or Postgraduate Preparation Programs
(Continued)

F. The Washington Education Association supports the implementation of two- or three-year graduate-level preparation programs based on the recommendation of the WEA-sponsored Washington Commission on Educational Excellence. The Commission emphasized the extensive knowledge of subject matter and pedagogy necessary for good teaching and suggested that graduate status would improve funding and staffing of preparation programs.

II. Summary of Major Findings

A. The Current State Certification System

- The central rationale for state certification of teachers is that regulation is necessary to avoid the individual and social risks of incompetent teaching and to promote competent teaching.

- Washington's current certification system, in which individuals are granted a certificate upon completion of a collegiate program periodically judged satisfactory according to general process and outcome standards, appears to provide the state with reasonable control over the competence of teachers in light of the difficulties of defining and measuring competence and of the need for efficiency in state government.

- There is evidence that the State Board of Education and the staff of the Office of the Superintendent for Public Instruction are reasonably vigilant in the enforcement of prevailing standards for approved programs.

- There is evidence that the State Board and OSPI staff are actively involved in the review of the adequacy of current certification regulations.

B. Approved Initial Teaching Certificate Programs

Sixteen Washington institutions operate initial teacher certification programs approved by the State Board of Education.

General University Requirements

- The minimum amount of course work required for the bachelor's degree and certification ranges from 180 to 192 quarter hours at the 16 institutions. Only two institutions, Seattle University and Northwest College, require more credits for certification than for other undergraduate programs.

- Though the specific requirements vary considerably, bachelor's degree and certification programs require students to spend on the average about one-third of their undergraduate careers meeting breadth or distribution requirements--an average of about 4 percent of the minimum graduation requirements in literacy courses, 11 percent in arts and humanities courses, 7 percent in history and social science courses, 7 percent in mathematics and science courses, and 2 percent in other courses.

Program Admission Requirements

- All 16 institutions require a minimum cumulative grade point average for admission to teacher preparation that is above their own cumulative grade point requirement for graduation.
- All 16 institutions require admitted students to have passed a written test in English.
- Fourteen require admitted students to have passed a written test in mathematics.

Retention and Exit Requirements

- Ten institutions require certification students to achieve a cumulative grade point average at program completion that is higher than that generally required for graduation.
- Eight institutions require certification students to achieve a grade point average in their majors that is higher than that generally required for graduation.
- Twelve institutions require students to earn specified minimum grades or averages in required education courses.

Course Requirements

- This report analyzes seven different teaching endorsement programs at all the Washington institutions that offer them--elementary certification with an education-related major or specialization, elementary certification with an English major, and secondary certification with biology, English, history, mathematics, and social studies majors.
- In all seven of these programs, a minimum of about 90 percent on average of an undergraduate's time is spent meeting the specified requirements for the degree and the certificate.
- Secondary certificate earners in these programs are required on average to spend about one-third of their total graduation requirements in their majors and about one-fourth of those requirements in education courses.
- Elementary education majors/specialists spend on average about half of their total graduation requirements in education-related course work.
- Elementary certificate earners with English majors spend on average about one-fourth of their total graduation time in English courses and over one-third of those requirements in education-related courses.
- The primary difference between elementary and secondary preparation programs is that elementary programs require on average about twice as much curriculum and methods course work.

- One important variation in the professional education requirements at the different institutions is that some programs offer students the opportunity for extended field experience prior to student teaching. At Seattle Pacific University and the University of Washington, these extended field programs are mandatory for all students; at Central Washington University and Western Washington University they are options.

- This report also analyzes the course work for additional secondary teaching endorsements in biology, English, history, mathematics, and social studies required of teachers with majors in other subjects.

- On the average, it takes a little less than the equivalent of two quarters of full-time study to add an endorsement in one of these subjects to one's secondary teaching certificate. This represents less than half the average requirements of the majors in these subjects.

- There is considerable variation among the institutions' requirements for additional endorsements, ranging in biology, for example, from 20 to 40 quarter hours.

Field Work Requirements

- The specific field work requirements were analyzed only at the five public universities.

- On the average, elementary certification programs at these five public institutions require students to spend the equivalent of about 17 full-time weeks in field work, ranging from about ten to about 22 weeks.

- On the average, secondary certification programs at the five public institutions require students to spend the equivalent of about 15 full-time weeks in field work, ranging from about ten to about 20 weeks.

- The extended field experience programs at Central, Western, and the University of Washington require students to spend the equivalent of about six more full-time weeks in the field than other programs.

- The decision of with whom a student will student teach is usually made cooperatively by university supervisors, school administrators, and the teacher involved.

- Universities appear to have less say in field placements prior to student teaching except in the extended field experience programs.

- Cooperating teachers receive little or no compensation for their assistance to student teachers, no more than $60 per quarter.

- University supervisors observe students from three to ten times during student teaching.

- The optimum number of students supervised by a full-time supervisor ranges from 16 to 25 students at the five universities.

- The five public institutions are all considering or experimenting with alternative procedures for supervising student teachers.

- Each institution formally evaluates student teachers at least twice during student teaching using an institutionally developed instrument that emphasizes the state's generic competencies for teachers.

C. Characteristics of First Teaching Certificate Completers

Demographic Characteristics:

- About one-third of the students certified through the five public institutions in 1982-83 were at the "traditional" age of college graduation, 21 or 22 years old. The average age of certificate earners was about 26.

- Women constituted about 85 percent of the recipients of elementary certificates and about half of the secondary certificate recipients.

- Minorities constituted only 4.4 percent of all certificate earners, a proportion somewhat smaller than that for minority baccalaureate degree recipients and considerably smaller than that of minority school children.

- The two research universities, University of Washington and Washington State University, trained about a third of the first teaching certificate earners in public universities even though they enrolled over 60 percent of the undergraduates in those universities.

Certification Characteristics:

- Fifty-three percent of the certificate earners at the five public universities received elementary endorsement; 42 percent received secondary endorsement, and 8 percent received K-12 endorsement.

- Physical education and social studies were the most frequent fields of secondary certification.

- There is little evidence of institutional specialization in the preparation of secondary teachers in particular fields.

- Most students, about 75 percent, complete the bachelor's degree and teacher preparation at the same time. Students at the University of Washington are a significant exception to this pattern.

Academic Characteristics:

- Using cumulative college grade point average as a measure of academic ability, teaching certificate earners appear to be somewhat more academically talented on average than their institutions' graduates as a whole.

- Nearly two-thirds of elementary teachers majored in one of four education-related fields -- early childhood, elementary education, reading, and special education. The University of Washington is an exception to this pattern.

- About three-fourths of the teachers of biology, English, history, mathematics, and social studies were endorsed on the basis of a major in the field. The percentages at Eastern Washington University and Washington State University were considerably lower.

- Over 85 percent of certificate earners had grade point averages in their majors above 2.75. Over 27 percent had major grade point averages above 3.50.

- Elementary teachers completed on average 2.6 quarters of college work beyond the minimum required for college graduation. The secondary teachers examined in this report completed on average from 3.4 to 4.7 quarters of work beyond the graduation minimum.

- Some elementary and secondary teachers were able to meet degree and certification requirements within the minimum required for graduation.

- Elementary teachers completed on average over five quarters of education department courses and another quarter of education-related course work taught in other departments.

- The averages for both elementary and secondary teachers suggest that most students complete a reasonably balanced and diverse program of studies. Nevertheless, some students took no course work in English or in mathematics or in history, for example.

- Secondary teachers of biology, English, history, mathematics, and social studies completed on average four or more quarters of course work relevant to their fields of endorsement. Some students at some institutions completed considerably less, in a few cases as little as slightly more than one full-time quarter.

- Secondary teachers completed on average about three quarters of education department courses and almost another quarter of education-related courses in other departments.

Employment:

- Fewer than half of the certificate earners were able to secure employment as regular classroom teachers. Considerably more, perhaps as many as three-fourths, were making a contribution to the state's K-12 educational system through teaching, substituting, or other work in the schools.

- The percentages of students who find teaching positions vary only moderately among the five public universities.
- The proportions of elementary and secondary certificate earners who obtain teaching jobs are about the same.
- These proportions vary considerably by subject for secondary teachers, ranging from two-thirds or more of the special education, mathematics, and music teachers to less than one-fourth of the physical education, health, and art teachers.
- High college grades appear to confer some marginal advantage in the teaching market.
- Some certificate earners who graduate in the bottom fifth of their college class are hired as teachers.
- Three-fourths of those who graduate in the top fifth of their class remain in education in their first year after college, half as teachers, and the remainder as substitutes.

College Admissions Characteristics

- The average high school grade point average of certificate earners in 1982-83 was significantly higher than that for all high school students who took the Washington Pre-College Test (WPCT) in 1978; certificate earners' WPCT verbal and quantitative test scores were somewhat higher on average than those of all test takers.
- The average high school grade point average of certificate earners in 1982-83 was about the same as that of all entering freshmen at Washington public universities in the fall of 1979; certificate earners' WPCT verbal and quantitative test scores were somewhat lower than those of all entering university freshmen.

III. The Current State Certification System

A. The Rationale for and Evolution of State Certification Policies

All forms of occupational licensure, of which teacher certification is the leading example in this state, involve the government's intervening in the free market. In free markets when the full costs of failure and the full benefits of success accrue to producers, those producers have the greatest incentive to act efficiently. Economists argue that this arrangement promotes the overall efficiency of the entire economic system even though some individual producers may fail and some of the society's resources may thereby be squandered.

The difficulty in education is that the penalties of failure never fall exclusively on unsuccessful schools and teachers but also upon individual children and others in our society who have been deprived of the potential benefits of the full development of those children's talents. It is argued, therefore, that the state should intervene in the market for education in order to minimize the risks of failure. Ideally, teacher certification laws attempt to reduce those risks by making clear evidence of teaching competence a condition for employment as a teacher. At the same time that we wish to minimize the risks of failure that characterize a free market, however, we hope not to interfere with certain advantages of the free market--especially, the market's ability to deliver an adequate supply of teachers and its incentives for superior performance.

While the defining purpose of teacher certification is to assure and promote the competence of teachers, there are two major difficulties which any centralized system for doing so must face. The first is the problem of constructing a clear and meaningful definition of competence. The public's goals for education are many, various, and often conflicting. Moreover, the local conditions under which those goals are to be achieved are equally diverse. As a result, the formulation of a single, widely accepted definition of competence that is specific enough to be enforced is extraordinarily difficult. Second, the problems of measuring competence are formidable. It is simply not feasible for a central certifying authority to directly observe and evaluate the thousands of individuals seeking certification each year, at least without excessive cost. Nor are truly reliable and inexpensive indirect measures of competence, such as paper-and-pencil tests, available or appropriate.

Because of these difficulties in defining and measuring teaching competence, the earliest certification regulations focused on the process of teacher preparation rather than the product, even though it is the quality of the product that matters. These regulations often narrowly prescribed the amount and type of college course work required for certification in the hope of thereby establishing some measure of control over the academic and pedagogical quality of teaching candidates. Undoubtedly, such regulations were at least partially successful, but they could not guarantee the quality and, to some extent, even the content of the required courses. Nor was there any solid evidence that the particular mix of courses required necessarily produced the most competent teachers. These regulations left certification officials uncertain of the relevance of their efforts to their central responsibility--the assurance and promotion of teaching competence. At the same time, college faculties often felt unduly constrained from implementing improvements suggested by recent research or necessitated by changing social conditions.

In the 1960s, states began to abandon this credit-counting approach to certification. Washington was among the leaders in adopting a new approach, an approach with two significant features. First, the certifying authority periodically evaluates and approves entire programs for teacher preparation by sending teams of evaluators to the college campuses. Second, these evaluators judge programs not by whether they involve a particular course of studies but by whether those programs develop in students a set of very general abilities believed to be essential to good teaching, what are called in Washington the generic competencies. Certification depends, then, upon a student's completing a state-approved program in which he or she develops and displays the requisite abilities.

On the one hand, this approach provides central authorities more realistic control over the quality of the process of teacher preparation. No longer are authorities involved in granting certification based on the completion of appropriately titled courses about which nothing else is known. At the same time, this approach establishes a more direct link between certification and teaching competence. It meets the problems of defining competence by establishing very general criteria to which members of the public, teachers, administrators, and college faculties can agree. It meets the problem of measuring and enforcing the competency requirements by entrusting that evaluation to college faculty members and school teachers who have direct experience with the candidate for certification. That trust in turn is based upon the judgments of the site evaluation teams which have seen the program in operation. Finally, this approach provides for a flexibility within programs and a diversity among them that was impossible under the credit-counting system. College faculties are free to design and modify the course of studies as long as they can make a persuasive case that the prescribed curriculum helps students to acquire the generic competencies.

B. The Certification System in Washington

Program approval and generic competencies are the central characteristics of the current system in this state, the most recent major revision of which was enacted in 1978. There are three broad types of regular certificates available in Washington--teaching, administration, and educational staff associates (counselors, nurses, psychologists, etc.). This report focuses on the certification of teachers and will not, therefore, deal in any detail with other types of certificates. Each type of certificate is issued at two levels, initial and continuing. The issuance of all certificates at both levels depends either upon the completion of an approved in-state program or upon the completion of a similar program in another state. Three special types of certificates may also be issued--a consultant special certificate which enables individuals to undertake limited and specific teaching assignments when no regularly certified teacher is available, a substitute certificate which allows otherwise qualified teachers usually without recent enough experience for regular certification to substitute for limited periods, and an emergency certificate which allows a person who holds the required degree and has substantially completed the required preparation program to teach temporarily when no regularly certified teacher is available.

The Program Approval Process. For a program to become approved, the sponsoring institution must submit detailed documentation about the program to the Office of the Superintendent of Public Instruction (OSPI). After a staff review, the program is evaluated on-site by a team which must include one representative of the universities, school organizations, and professional organizations. If a team recommends approval, their report is forwarded to the State Board of Education. The Board may approve the program for from one to five years and may make their approval contingent upon the satisfaction of specified conditions. At this time, 16 institutions operate approved programs under the 1978 standards. A summary of the types of currently approved programs is included in Table 1; details about teacher preparation programs are included in Appendix A.

Program Approval Standards. All certification programs must meet ten basic standards designed to assure the appropriateness of the content and criteria of the preparation process and the adequacy of the preparing institution's resources:

1. Cooperation. Programs must be developed with the assistance of a program unit representative of the university, the profession, and the schools.
2. Program management. Responsibility and authority for program development, implementation, and evaluation must be clearly assigned.
3. Program outcomes. Programs must promote students' acquisition of the specified generic competencies and must evaluate students in terms of those competencies. Institutions must use published standards of the National Association State Directors of Teacher Education and Certification, the National Council for Accreditation of Teacher Education, and of other relevant professional and scholarly associations as guides to the interpretation of the generic competencies and to the specification of particular program outcomes relevant to those competencies.

Table 1. Numbers of Institutions with Approved Programs, 1978 Standards.

	Public Institutions		Independent Institutions		TOTALS	
	Initial	Continuing	Initial	Continuing	Initial	Continuing
Teaching						
Elementary Teacher	5[a]	5	11	9	16	14
Secondary Teacher	5[a]	5	10	8	15	13
Administration						
Superintendent	2	2	2	2	4	4
Principal	5	5	6	5	11	10
Program Administrator	3	3	3	3	6	6
Ed. Staff Associate (ESA)						
Communication Disorders Spec.	4	4	0	0	4	4
Counselor	5	5	7	7	12	12
Nurse	2	2	2	2	4	4
Occupational Therapist	1	1	1	1	2	2
Physical Therapist	1	1	0	0	1	1
Psychologist	4	4	1	0	5	4
Reading Resource Spec.	5	5	2	2	7	7
Social Worker	1	1	0	0	1	1

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[a] Students at The Evergreen State College may receive initial teaching certification through a contract with the University of Puget Sound.

4. Selection and retention. Admissions and retention standards must be specific, relevant to program objectives, non-discriminatory, and strictly enforced.
5. Individualization. Programs should be flexible enough to accommodate a reasonable range of cognitive, social, and cultural differences among students.
6. Field experience. All students must complete a sequence of carefully planned field work assignments which is suited to the developing abilities of students, adequately supervised, and designed to promote the acquisition of the generic competencies. For the initial teaching certificate these assignments must include opportunities for observation and at least eight weeks of student teaching.
7. Supervision. Students' progress in the program should be frequently monitored, evaluated, and discussed with the students.
8. Options. Program units are encouraged to develop innovative alternatives in teacher preparation.
9. Resources. Program faculty, facilities, library materials, and other resources should be sufficient to support the proposed program.
10. Research and evaluation. Program design and modification should be based upon systematic evaluation of its results including follow-up on its graduates.

Generic competencies. The program standards require the preparation process to focus upon the development in all certification candidates of certain general categories of knowledge and skill. Colleges and universities are expected to specify the detailed content of this knowledge and skill and to develop activities in which students may acquire them. In particular, for all initial certificates candidates should:

1. understand and appreciate the wide variety of social, cultural, and economic differences and be able to work constructively with individuals of diverse backgrounds;
2. be able to communicate orally and in writing with students, parents, and colleagues;
3. understand the needs and characteristics of exceptional students.
4. understand the legal rights and responsibilities of the position they are preparing for;
5. understand the organization and ethics of the profession;
6. understand the general structure and purposes of the K-12 educational program; and,
7. be able to communicate with parents and involve them in their children's learning.

In addition, programs for each type of certificate must promote generic competencies specific to that professional role. Candidates for the initial teaching certificate should:

8. be able to design and conduct instruction, including necessary reading and remedial instruction;
9. be able to manage the classroom in order to maximize student learning;
10. have a broad general education and a more extensive command of one or more subjects relevant to teaching; (Secondary candidates must meet this standard by completing a baccalaureate degree with a major in an appropriate academic field. Elementary teachers must hold a baccalaureate degree with a major in an academic field or a teaching specialization. Elementary education majors must include an emphasis in an academic field.);

11. understand the development of students and apply that understanding to the design of instruction; and,

12. be able to discipline students effectively and humanely.

C. Results of Program Reviews under the 1978 Standards

Although the prevailing standards were adopted in 1978, the State Board of Education did not require institutions to comply with those standards until September of 1983. At this time, then, all approved programs have been reviewed under the 1978 standards. Table 2 indicates the number of programs approved in each year since the 1978 standards were adopted. In addition, students enrolled in programs prior to their institution's approval under the new standards may complete programs approved under previous standards. As a result, it may not be until 1986 that all first certificate earners at Washington institutions complete programs approved under the 1978 standards.

Table 2. Dates of Program Approvals under 1978 Standards.

	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Teacher-initial	0	0	2	5	5	3	1
Teacher-continuing	0	0	1	3	6	4	0
Administrator-initial	1	3	5	4	8[a]	1	0
Administrator-continuing	1	3	5	4	7[a]	1	0
ESA-initial	1	0	2	10	10[a]	12	2
ESA-continuing	1	0	2	8	10[a]	13	2

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[a] Includes reapproval of one program first approved in 1978-79.

As noted earlier, these approvals require a positive recommendation of the visiting team followed by formal action by the State Board of Education. There are several ways in which the program standards are enforced. First, OSPI staff advise proposing institutions about the extent to which their programs meet the standards. Institutions usually do not request a site visit until they have some positive indication from staff that programs appear to be approvable. Second, visiting teams have a variety of options based upon their evaluation of the proposed programs. They can:

1. give a negative recommendation. These programs are never taken before the State Board. Because of the staff advisory process, this is a rare occurrence;
2. give a positive recommendation contingent upon certain conditions being satisfied before that recommendation is taken to the State Board;
3. recommend that the approval period be shorter than the full five years. Teams may also recommend an initial short period of approval which may be extended to the full five years upon a subsequent positive recommendation of an OSPI staff member or one or more team members; and,
4. give a positive recommendation contingent upon the satisfaction of certain conditions after approval is granted. The satisfaction of these conditions may be determined by a revisit by team members, a review by OSPI staff, or a progress report by the institution.

The State Board does not have the statutory prerogative to disapprove a program, but it may place conditions upon its approval. In practice, the Board almost always acts as the visiting team recommends. Table 3 summarizes visiting teams' and the State Board's formal actions under the 1978 standards.

Table 3. Team and SBE Action, 1978 Standards.

	Type of Certification Program					
	Teacher		Administrator		ESA	
Action	Initial	Continuing	Initial	Continuing	Initial	Continuing
Negative team recommendations	0	0	2	3	0	1
Team prior conditions for positive recommendation	5	4	1	0	6	5
Length of SBE Approval						
1 year	1	1	0	0	0	0
2 years	1	2	2	0	0	3
3 years	3	1	9	9	5	6
4 years	1	2	0	2	3	3
5 years	10	8	10	9	29	24
Conditions on Approval						
Team re-visit	1	1	3	2	0	0
Staff review	6	9	10	11	22	24
Institutional progress report	2	0	0	0	2	1
Conditional extension of approval	2	3	8	7	2	4
Full approval for 5 years without prior or interim conditions	3	1	6	5	7	2

This table demonstrates that visiting teams and the State Board have been reasonably active in using the available means for holding institutions to the current standards; fewer than one-fifth of all programs have received unconditional approval for the entire five-year period. To be sure, the specific nature of the conditions varies a great deal--from things as minor as updated documentation on the program to those as major as the adding of faculty members. And, because the 1978 standards marked a significant departure from previous standards, the incidence of conditional recommendations has probably been higher in the past six years than it might be in the next six. Nevertheless, it is clear that the visiting teams, OSPI staff, and the State Board of Education have been reasonably vigilant in the enforcement of the 1978 standards.

Finally, the staff of the Certification Office at OSPI conducts a biennial on-site review of certification and documentation procedures on each campus. Apparent irregularities are reported to appropriate institutional officials and to OSPI's Professional Education Section, which administers program approval.

D. Changes in the Certification System

The system of teacher certification in the State of Washington is in its general features congruent with the best contemporary thinking on the subject. The program approval approach based on both general process and outcome standards appears to represent a reasonable way of organizing a state's attempts to control the educational marketplace. Moreover, there is evidence that those who manage that system are conscientious in their efforts to make the system operate as it is intended to.

Reasonable concerns about the system, therefore, reflect questions about the details rather than the fundamental design and overall operation of that system. Those details are in part the responsibility of the State Board and in part that of the institutions, visiting teams, and OSPI staff which must interpret and implement the regulations established by the Board.

There is evidence that all of these entities are actively reviewing the details of the system. The State Board, after six years of experience with the 1978 standards, has recently adopted a series of modifications to the certification regulations. These modifications include:

1. A requirement that admissions criteria to initial teacher certifition programs include a minimum cumulative gpa set by the preparing institution.
2. A requirement that all students admitted to teacher preparation programs achieve a minimum total standard score of 80 on the verbal and quantitative composites of the Washington Pre-College Test.
3. The development and pilot testing of a state certification examination including an observational instrument for evaluating student teaching.
4. Additions to current generic competencies that (a) provide a more detailed specification of the requirements for knowledge of exceptional students, (b) require skills in working with parents and (c) require skills in reading instruction, remediation, and computer instruction.
5. A requirement that teachers granted the continuing certificate after July 1, 1986, be assigned to teach only in their areas of endorsement.

6. A requirement that teachers granted the continuing certificate after July 1, 1986, must meet continuing education as well as experience criteria for the renewal of the certificate.

In addition a number of other issues are under study by the State Board, its Professional Education Advisory Committee, and OSPI staff:

1. Requiring initial certification programs to include more than four years of undergraduate study.
2. Requiring initial certification programs to be entirely post-baccalaureate.
3. Reorganizing levels of certification to include certification specifically for the middle school/junior high.
4. Requiring current holders of the continuing or permanent certificate to teach only in their areas of endorsement.
5. Requiring current holders of the continuing or permanent certificate to meet continuing education requirements for maintenance of the certificate.

The results of these studies are expected by June 30, 1985, and may lead to further Board amendments of the certification regulations.

Finally, the State Board has urged the funding of two programs which affect the continuing education of teachers:

1. A beginning teacher assistance program which would entail the supervision and assistance of first year teachers by experienced teachers who have been trained for that task.
2. The modification and increased funding of the Inservice Training Act of 1977 to permit the establishment of a planned system of inservice education in every school district.

In addition, the approved programs are constantly under review by the universities and the program units. While most of the recent changes in programs have been part of the effort to meet the 1978 standards, there is evidence that institutions are continuing to modify their programs. The section on initial teacher education programs notes some of the changes that have been instituted since programs were approved under the 1978 standards.

IV. Approved Initial Teaching Certificate Programs

A. General Requirements for the Bachelor's Degree

Most certification authorities insist on the importance of distinguishing between baccalaureate degree and certification requirements. The completion of a degree, they point out, is not an automatic guarantee of a student's ability to perform adequately as an elementary or secondary school teacher.

Nevertheless, the State Board of Education requires candidates for certification to hold the bachelor's degree. And, at this time, most initial certificate earners complete all or most of the certification requirements while they are working toward the degree. Therefore, baccalaureate programs are both part of the minimum requirements for certification and a context or set of constraints within which certification programs are necessarily designed.

The details of any specific institution's requirements for the baccalaureate degree are usually very complicated. But the requirements of all the institutions with approved programs in Washington have three general features:

1. Minimum standards for the overall quantity and quality of student academic work. These include a minimum number of college credits and a minimum cumulative grade point average.
2. Breadth requirements. These usually require the student to take a minimum number of credits in a few broadly defined categories.
3. Depth requirements. These are requirements to complete a major and in some institutions a minor.

Overall quantity and quality requirements. As indicated in Table 4, the minimum number of credits for the bachelor's degree at any institution with an approved program is 180 quarter hours or its equivalent in semester hours (1 sem. hr. = 1.5 q. hr.) or semester course credits (1 sem. course = 5 q. hrs. at Whitworth and 6 q. hrs. at University of Puget Sound). Seven of the 16 institutions, including all five public institutions, require 180 q. hrs. The other requirements range from 186 q. hrs. at Whitman to 192 q. hrs. at Gonzaga, Pacific Lutheran, University of Puget Sound, and Walla Walla College. Only two institutions, Seattle University, and Northwest College (190 q. hrs.) generally require more credits for education students than for students in other programs (180 q. hrs. at Seattle University and 183 q. hrs. at Northwest). However, as we shall see, it is in some few instances impossible to meet certification program requirements within the minimum graduation requirements.

All of the 16 institutions require a minimum cumulative g.p.a. of 2.0 for all bachelor's degrees. In many instances, certification program requirements exceed these university-wide minimums.

Breadth requirements. These requirements for certification candidates are summarized in Table 4. In 14 of the cases, these requirements are largely identical with university-wide standards for all degree programs. At the University of Washington, the standards are specific to the college in which the students are enrolled; that is, there are no university-wide requirements. The requirements at Gonzaga include distinctive requirements for special education and physical education majors only. In several cases, education students are required to take particular courses to meet the requirements.

Table 4. Summary of General University Course Requirements for the Bachelor's Degree for Education Students.

	Units of Credit Used[a]	Total Credits for Graduation	Specific Course Credit Requirements										Total Specific Course Requirements[h]	
			Literacy[b]		Arts and Humanities[c]		History and Social Science[d]		Mathematics and Science[e]		Others/ Unclassifiable[f]			
			Min[g]	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Central Washington University	QH	180	12	12	15	15	15	15	20	20	2	2	64	64
% of Total Credits		100%	7%	7%	8%	8%	8%	8%	11%	11%	1%	1%	36%	36%
Eastern Washington University	QH	180	0	15	12	17	12	16	12	20	0	4	44	64
% of Total Credits		100%	0%	8%	7%	9%	7%	9%	7%	11%	0%	2%	24%	36%
University of Washington	QH	180	0	15	20	20	20	20	20	35	0	15	60	105
% of Total Credits		100%	0%	8%	11%	11%	11%	11%	11%	19%	0%	8%	33%	58%
Washington State Univ. Elementary and non- A. & S. Secondary	SH	120	6	6	6	6	6	6	10	10	0	0	28	28
% of Total Credits		100%	5%	5%	5%	5%	5%	5%	8%	8%	0%	0%	23%	23%
Arts & Science Secondary	SH	120	6	6	6	15	6	15	12	12	2	10	41	49
% of Total Credits		100%	5%	5%	5%	13%	5%	13%	10%	10%	2%	8%	34%	41%
Western Washington University	QH	180	3	13	10	28	17	35	7	23	0	0	55	81
% of Total Credits		100%	2%	7%	6%	16%	9%	19%	4%	13%	0%	0%	31%	45%
Gonzaga University--A. & S. majors	SH	128	7	7	23	23	12	12	10	10	0	0	52	52
% of Total Credits		100%	5%	5%	18%	18%	9%	9%	8%	8%	0	0%	41%	41%
P.E. and Special ed. majors	SH	128	7	7	23	23	9	9	7	7	2	2	48	48
% of Total Credits		100%	5%	5%	18%	18%	7%	7%	5%	5%	2%	2%	38%	38%
Heritage College	SH	126	9	9	9	9	9	9	9	9	0	0	36	36
% of Total Credits		100%	7%	7%	7%	7%	7%	7%	7%	7%	0%	0%	29%	29%
Northwest College	QH	190	9	18	20	29	15	15	15	15	5	14	73	73
% of Total Credits		100%	5%	9%	11%	15%	8%	8%	8%	8%	3%	7%	38%	38%
Pacific Lutheran University	SH	128	4	4	16	16	8	8	8	8	12	12	48	48
% of Total Credits		100%	3%	3%	13%	13%	6%	6%	6%	5%	9%	9%	38%	38%
St. Martin's College	SH	120	9	9	12	12	6	6	7	8	2	2	36	37
% of Total Credits		100%	8%	8%	10%	10%	5%	5%	6%	7%	2%	2%	30%	31%
Seattle Pacific University	QH	180	6	12	40	40	19	19	10	10	0	0	75	81
% of Total Credits		100%	3%	7%	22%	22%	11%	11%	6%	6%	0%	0%	42%	45%

Table 4. (cont.) Summary of General University Course Requirements for the Bachelor's Degree for Education Students.

	Units of Credit Used[a]	Total Credits for Graduation	Specific Course Credit Requirements										Total Specific Course Requirements[h]	
			Literacy[b]		Arts and Humanities[c]		History and Social Science[d]		Mathematics and Science[e]		Others/ Unclassifiable[f]			
			Min[g]	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Seattle University	QH	190	5	5	30	30	15	15	10	10	0	0	60	60
% of Total Credits		100%	3%	3%	16%	16%	8%	8%	5%	5%	0%	0%	32%	32%
University of Puget Sound	SC	32	2	2	3	3	3	3	3	3	0	0	11	11
% of Total Credits		100%	6%	6%	9%	9%	9%	9%	9%	9%	0%	0%	34%	34%
Walla Walla College	QH	192	8	16	28	36	12	20	12	16	2	22	74	86
% of Total Credits		100%	4%	8%	15%	19%	6%	10%	6%	8%	1%	11%	39%	45%
Whitman College	SH	124	0	6	14	26	0	18	6	12	4	10	48	48
% of Total Credits		100%	0%	5%	11%	21%	0%	15%	5%	10%	3%	8%	39%	39%
Whitworth College	SC	38	1	1	4	4	1	1	2	2	3	5	11	13
% of Total Credits		100%	3%	3%	11%	11%	3%	3%	5%	5%	8%	13%	29%	34%
Average Percentage of Total Credits			4%	6%	11%	13%	7%	9%	7%	9%	2%	4%	34%	38%
Lowest Percentage Required			0%	3%	5%	5%	0%	3%	4%	5%	0%	0%	23%	23%
Highest Percentage Required			8%	9%	22%	22%	11%	19%	11%	19%	9%	13%	42%	58%

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[a] QH = quarter hours; SH = semester hours; SC = semester course credits.

[b] Literacy courses include those in writing and communication.

[c] Arts and humanities include courses in literature, art, music, philosophy, religion, and related fields.

[d] History and social science include courses in history, psychology, sociology, anthropology, economics, geography, and related fields.

[e] Math and science include courses in mathematics, biology, chemistry, physics, and related fields.

[f] This category includes courses in physical education, foreign language, and education as well as requirements that are interdisciplinary or so general that they cannot be classified in a specific disciplinary category.

[g] Differences between the minimum and maximum requirements in any category may result from flexibility in the requirements, differences in credit for courses that satisfy the requirements, or requirements that depend upon students' high school background or their performance on placement examinations.

[h] Because some specific field requirements are flexible, the total minimum and maximum requirements may not be equal to the sum of the minimums or maximums in the five fields.

In order to include the requirements of all institutions in a single table, the requirements were classified in five broad categories -- literacy, humanities, history and social science, mathematics and science, and others. This classification inevitably masks a greal deal of the richness and specificity of the requirements at any particular institution.

It was also necessary to indicate a maximum and a minimum number of credits required in each category. Some institutions allow students to "test out" of certain requirements either by passing a placement examination or by satisfactory achievement in high school courses. Some also allow students a certain degree of flexibility in meeting the requirements. Eastern Washington University, for instance, requires at least 44 q. hrs. of credit with a minimum of 12 q. hrs. each in humanities, social science, and math/science. The remaining eight hours may be taken in any two of these three categories.

In any case, the indicated minimums are absolute. Thus one can be assured, for instance, that any current graduate of Eastern Washington will have taken at least 12 q. hrs. of humanities courses.

Several general observations about these requirements may be made:

- Students on average spend roughly a third of their total time in college meeting these breadth requirements with no one spending less than about one fourth of his or her total time.
- All students must meet basic literacy requirements either by satisfactory college course work or by "testing out" of such requirements.
- All students must take at least some college course work in the humanities and in math/science.

- Students at all institutions but one are required to take course work in history/social science.
- Despite these commonalities, the general university course requirements vary considerably from one institution to another.

B. Admissions, Retention, and Exit Requirements for Initial Teaching Certificate Programs

Appendix B includes an updated version of material originally compiled by the Washington Council of Deans and Directors of Education and summarizes the admissions, retention, and exit requirements for each of the 16 institutions with approved initial teaching certificate programs. Again, because of the need to use a uniform format, some of the detail of those requirements has been lost. In addition, because these standards are under review, many of them may change in the near future. Several general observations may be made about the admissions requirements:

- All approved programs' admissions requirements include both minimum performance in college work and on special examinations.
- Since 1980, at least 11 institutions, including all five public institutions, have increased their admissions standards.
- All 16 institutions require a minimum overall gpa or gpa in the general university course requirements for admission to teacher preparation.
- All of the institutions set the general gpa admission requirement above the institution's cumulative gpa requirement for graduation.
- All institutions require admitted students to pass some form of test in the use of written English.

- Six institutions require a minimum performance in a college English course.
- Fourteen of the 16 institutions require admitted students to pass some form of test in mathematics.
- One of the remaining two institutions requires a minimum performance in a specific college mathematics course for admission; the other requires satisfactory completion of a college mathematics course for elementary students to exit from the program.
- Three institutions permit students who do not attain minimum scores on English or mathematics tests to demonstrate basic skills in alternative ways (minimum performance in college English courses at Eastern Washington University and Washington State University, in a college mathematics course at Washington State University, and in reading, spelling, and math "labs" at Seattle Pacific University).

The retention and exit requirements tend to focus on college achievement:

- All institutions implicitly require satisfactory completion of certification program, major, and other baccalaureate degree requirements.
- All students who complete the certification program simultaneously with the bachelor's degree have to meet minimum gpa requirements in the major and in all college work either through explicit program requirements or through the institution's general graduation requirements.
- Ten of the 16 institutions require a higher cumulative gpa for certification than that generally required for the bachelor's degree.
- Eight institutions require a higher gpa in the major than is generally required for the bachelor's degree.

- Twelve institutions require specified minimum grades or averages in required education courses.
- None of the institutions administers a written test as an exit requirement.
- All institutions implicitly require satisfactory completion of student teaching as judged by the university supervisor.

C. Course Requirements

There are nearly 600 SBE-approved teaching endorsement programs at 16 institutions in Washington. While many programs at an institution share some similar requirements, there are significant differences among programs even at the same level of endorsement. At Central Washington University, for example, with 26 permissable majors and two main options in the teaching core, there are at least 52 distinct courses of study which a student might pursue in order to become an elementary school teacher.

To make this analysis manageable, therefore, it has been necessary to focus on particular programs from among the multitude offered. At the elementary level, two programs from each institution were selected -- one involving a major in eduation or a specifically teaching-oriented field and one including a major in English or language arts. These two programs are representative of the two categories of majors permitted for elementary teachers by the State Board, an academic field or a teaching specialization. Five secondary programs at each institution were selected for analysis -- programs with majors in biology, English, history, mathematics, and social studies. These five programs represent what are generally viewed as "solids" in the secondary school curriculum. In addition, these appear to be among the most frequently taught subjects in Washington secondary schools. Finally, although not every institution offers a program in these subjects, they are among the most frequently offered programs.

Appendix C includes statistical analyses of each of these seven programs at the sixteen institutions. There are two tables for each program. The first analyzes all the required course work in the program, including that in the major, required minors, professional teaching core, and general university course requirements. The second analyzes in greater detail the education-related course work identified in the first table.

Several things should be noted in reading and interpreting these tables:

1. These figures represent the absolute minimum of course work needed to meet the requirements. When possible, courses that meet more than one requirement were selected -- courses in the major or minor that would meet, for instance, ethnic studies requirements in the teaching core or general university course requirements. It was also assumed that the minimum general university course requirements were applicable. Depending, then, on a particular student's educational background or on his/her specific course selections, it may take considerably more college work to meet the requirements.
2. To prevent confusion, courses taken to meet requirements in left-hand columns that also meet requirements in subsequent columns are omitted from the totals in those subsequent columns.
3. The totals for education-related course work are maximums. That is, if appropriate education-related courses are available to meet any of

the major, minor, teaching, or general requirements, those courses were assumed to be included. In some cases, then, students may be able to meet the requirements with less education-related and more non-education course work.

A great deal of information is included in these tables. In order to look for some general patterns in the data, it may be useful to compare only the averages for each type of program. The average overall requirements for all seven programs are summarized in Table 5.

Several observations are appropriate:

- About 90% of an undergraduate's time is spent meeting the specified requirements for the degree and the certificate. At least one program in four of the seven program areas exceeds 100% of minimum graduation requirements.
- The remaining 10%, representing just over one full-time quarter term, is all the student has available for intellectual and career exploration through free electives.

Table 5. Average Overall Program Requirements as a Percentage of Total Graduation Requirements.

	Education-Related Courses	Non-Education Courses	Total
Elem. Ed. Specialization	51%	38%	89%
Elem. cert. with English major	38%	51%	89%
Sec. cert.--biology major	26%	65%	92%
Sec. cert.--English major	30%	58%	88%
Sec. cert.--history major	26%	62%	88%
Sec. cert.--math major	28%	61%	88%
Sec. cert.--soc. studies major	28%	66%	95%

- The exploration possible through the general university course requirements is somewhat more restricted for education students than for others because education students, especially at the elementary level, are often required to take specific courses to meet those requirements.

- Elementary programs require students to spend at least a third of their undergraduate careers in professionally oriented course work. Some require much more, almost two-thirds in some cases.
- Secondary programs require students to spend about one-fourth of their time, the equivalent of a year of full-time study, in professionally oriented course work. Some require as much as 40% of a student's time in professional study.

Table 6 summarizes the way in which the required education course work is distributed in the different programs. Again, certain patterns can be discerned:

- The major difference between elementary and secondary programs lies in the number of curriculum and teaching methods courses required. Elementary programs in general include twice as many of these courses.
- Elementary programs consistently include teaching content courses, courses in subject matter designed for teachers and taught by non-education faculty.
- Secondary programs tend not to include teaching content courses although these courses are more readily available at some institutions than others.
- Student teaching represents the single largest category of professional preparation in secondary programs, accounting for about a third of the education course requirements. Student teaching represents only about a fifth of the professional preparation of elementary teachers.

Table 6. Education Course Requirements -- Averages in Seven Program Categories.

		Course Requirements as a Percentage of Total Credits for Graduation				
Program	Content for Teachers[a]	Foundations and Others[b]	Ed. Psych. and Human Development[c]	Curriculum, Materials and Methods[d]	Field Work Courses[e]	Student Teaching[f]
Elementary Ed. Specialization	4%	6%	7%	21%	4%	10%
Elementary Cert. with English major	4%	3%	5%	14%	3%	8%
Secondary Cert. with Biology major	0%	3%	5%	7%	3%	9%
Secondary Cert. with English major	1%	3%	5%	9%	3%	9%
Secondary Cert. with History major	0%	3%	5%	6%	3%	9%
Secondary Cert. with Math major	1%	3%	5%	7%	3%	9%
Seconary Cert. with Social Studies major	1%	4%	5%	8%	2%	9%

[a] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[b] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[c] Required courses in psychology, whether or not they are taught within education departments.

[d] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[e] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[f] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

- These averages conceal one important difference, perhaps the major difference, among institutions' programs. Four universities -- Central Washington, Seattle Pacific, the University of Washington and Western Washington -- offer extended field experience programs in which students spend from half to all of their time in schools for at least two quarters. These programs also include the offering of college courses at the field sites. At Central and Western these extended field programs are options; at Seattle Pacific and the University of Washington, they are mandatory for all students.
- The disciplinary study of education -- its history, sociology, economics, and philosophy -- represents a very small part of teacher preparation, usually one general course if it is required at all.

Additional subject endorsements. Students can become certified to teach particular subjects at the secondary level not only by majoring in those subjects but also by completing a supporting endorsement program while majoring in another subject. Table 7 summarizes the requirements of these supporting endorsement programs for each of the five subjects under study here. Because these programs may be completed by already certified teachers who wish to add an endorsement to their certificates, the requirements are reported in credit hours or course credits rather than in percentage of graduation requirements. To facilitate comparisons, average requirements for the major in these subjects, translated into quarter hours, are reported in Table 8.

Table 7. Requirements for Endorsement in Additional Secondary School Teaching Subjects[a]

Institution	Unit of Credits[b]	Teaching Subjects														
		Biology			English			History			Mathematics			Social Studies		
		Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University	QH	5	35	40	3	20	23	0	20	20	6	27	33	--	--	--
Eastern Washington University	QH	0	20	20	4	19	23	0	18	18	6	19	25	0	24	24
University of Washington	QH	0	29	29	8	25	33	3	30	33	15	18	33	--	--	--
Washington State University	SH	3	15	18	3	15	18	3	18	21	0	16	16	3	18	21
Western Washington University	QH	0	25	25	4	20	24	0	35	35	4	28	32	3	29	32
Gonzaga University	SH	3	20	23	3	20	23	3	20	23	3	20	23	3	20	23
Heritage College	SH	--	--	--	2	16	18	--	--	--	--	--	--	0	16	16
Pacific Lutheran University	SH	--	--	--	6	12	18	2	16	18	2	18	20	2	16	18
St. Martin's College	SH	0	16	16	0	16	16	0	16	16	0	16	16	0	16	16
Seattle Pacific University	QH	0	20	20	0	20	20	0	20	20	0	20	20	--	--	--
Seattle University	QH	0	30	30	10	15	25	0	35	35	0	30	30	--	--	--
University of Puget Sound	SC	0	5	5	0	5	5	0	6	6	--	--	--	--	--	--
Walla Walla College	QH	0	27	27	6	27	33	0	28	28	0	28	28	--	--	--
Whitman College	SH	0	16	16	0	18	18	0	20	20	0	16	16	--	--	--
Whitworth College	SC	0	5	5	1	4	5	0	5	5	1	6	7	--	--	--
Average[e]	QH	1	26	27	4	23	27	1	27	28	3	24	27	2	26	28
Lowest[e]	QH	0	20	20	0	15	20	0	18	18	0	18	20	0	24	24
Highest[e]	QH	5	35	40	10	30	34.5	4.5	36	36	15	30	35	4.5	30	34.5

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[a] These are minimum requirements either for students completing initial secondary certification programs with majors in other subjects or for already certified teachers who wish to be recommended for additional endorsements.

[b] QH = Quarter Hours, SH = Semester Hours, SC = Semester Course Credits.

[c] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[d] These are courses which do not qualify as education courses as defined above. This is the minimum number of non-education courses needed to meet each institution's requirements.

[e] For these calculations, semester hours and semester course credits were translated into quarter hours. 1 SH = 1.5 QH. Whitworth 1 SC = 5 QH; University of Puget Sound 1 SC = 6 QH.

Table 8. Average Major Requirements in Five Subjects, Expressed in Quarter Hours.

	Major				
	Biology	English	History	Math	Social Studies
Average Requirements					
Education	2	7	2	3	2
Non-Education	66	50	57	52	71
Total	68	57	59	55	73
Lowest Requirements					
Education	0	0	0	0	0
Non-Education	41	31	45	35	48
Total	45	45	45	45	48
Highest Requirements					
Education	9	17	6	12	5
Non-Education	105	72	66	81	127.5
Total	105	72	70	81	127.5

Here, too, several observations are in order:

- On the average, it takes a little less than the equivalent of two quarters of full-time study in a subject to add that endorsement to one's certificate. The averages range from 27 to 28 q. hrs. Two full-time quarters are equal to approximately 30 q. hrs.
- At some institutions, however, considerably less work is required, as little as 18 to 20 q. hrs. or slightly more than one full-time quarter of study.
- On the average, a little less than half of the college work is required for the supporting endorsement than is required for the major.
- The percentage of course work required for the supporting endorsement compared with that for the major varies considerably among the institutions. For supporting endorsement in biology, for example, Central

requires nearly 90% as much work as the major whereas Eastern requires only about 30% as much work as the major.

- The averages for supporting endorsements do not follow the same patterns as those for the major. That is, while majors in biology and social studies generally require significantly more course work than majors in the other three subjects, supporting endorsement programs require about the same amount of work in all subjects.
- Both majors and supporting endorsements require about the same amount of education-related course work in each subject.
- Endorsement in additional subjects is generally believed to enhance a student's employment prospects, especially in small schools, and many institutions actively encourage their students to complete supporting endorsement programs.
- The State Board's teacher assignment policy, which requires current initial and new continuing certificate qualifiers to be assigned only in their areas of endorsement, is likely to increase the demand for secondary teachers with multiple endorsements.

D. Field Work Requirements

This report has already touched briefly on the field work required in approved initial teaching certificate programs. We have seen that, on the average, students devote about 9% of their baccalaureate program to student teaching and about 3% of their program to specific field work courses. However, at many institutions field work is not done exclusively in such special courses. Rather, it is integrated into a variety of other courses -- general introductory, methods, and sometimes psychology courses.

To understand current field work requirements, then, it is necessary to look beyond the general types of courses that students take to the specific requirements of these courses. Extended visits to the campuses of the five public institutions were undertaken primarily to collect data on students who had completed teacher certification programs. These visits also provided the opportunity to collect more detailed information about the required field work. The omission of independent institutions from this analysis is a result of the limited time and resources available for data collection and not of those institutions' unwillingness to be involved. At the same time, however, the public institutions enroll over 70% of the initial certificate earners trained in Washington. Therefore, this analysis does deal with a substantial portion of the state's teacher preparation system.

Time spent in the field. Common sense and research both suggest that well-supervised time in schools, with children, and engaged in teaching responsibilities is an important ingredient in good teacher preparation programs. Thus the amount of time spent in the field is at least one rough indication of the appropriateness of the teacher preparation curriculum. Table 9 summarizes for public institutions the minimum field requirements in the two elementary and five secondary programs analyzed in this report. Two cautions should be borne in mind in interpreting this table:

1. These are minimum requirements. All five institutions offer a variety of elective opportunities for additional field work.
2. Field work taken before student teaching takes a variety of different forms in different institutions and programs.

Table 9. Hours Spent in Field Work[a] in Seven Certification Programs[b] at Five Public Institutions.

	Certification Program						
Institution	Elem. Ed. Spec.	Elem. English Major	Sec. Biology Major	Sec. English Major	Sec. History Major	Sec. Math Major	Sec. Soc. St. Major
Central Washington University -- Campus-based							
Before student teaching[c]	120	120	120	180	120	240	120
Student teaching[d]	300	300	300	300	300	300	300
Total	420	420	420	480	420	540	420
Central Washington University -- Field-based							
Before student teaching	240	240	240	300	240	360	240
Student teaching	300	300	300	300	300	300	300
Total	540	540	540	600	540	660	540
Eastern Washington University --							
Before student teaching	165	115	115	115	115	115	115
Student teaching	330	330	330	330	330	330	330
Total	495	445	445	445	445	445	445
University of Washington —							
Before student teaching[e]	360	360	240	240	240	240	—
Student teaching	300	300	300	300	300	300	—
Total	660	660	540	540	540	540	—
Washington State University —							
Before student teaching	195	135	75	75	75	75	75
Student teaching	240	240	240	240	240	240	240
Total	435	375	315	315	315	315	315
Western Washington University — Campus-based							
Before student teaching	92	12	0	0	0	0	0
Student teaching	300	300	300	300	300	300	300
Total	392	312	300	300	300	300	300
Western Washington University -- Field-based							
Before student teaching	332	312	300	300	300	300	300
Student teaching	300	300	300	300	300	300	300
Total	632	612	600	600	600	600	600
Averages							
Before student teaching	222	190	152	164	152	176	130
Student teaching	294	294	294	294	294	294	293
Total	516	484	446	458	446	470	423

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[a] Hours reported are those actually spent in the field. Preparation time is not included.

[b] These are the same programs analyzed in previous tables.

[c] Includes field observation, tutoring students, assisting teachers, work with small groups of students, and in some cases, instructing full classes of students. Most of this work takes place in schools, but it may also include some work with college students in need of special assistance.

[d] For the sake of comparability, each week of full-time student teaching is considered to consist of 30 hours in the field.

[e] Excludes the program admission requirement of prior successful experience with children, which may be met through the student's own work or volunteer experience or by taking Education 301 which includes 60 hours of field work.

Several observations can be made about these requirements:

- The field-oriented programs including that at the University of Washington and the field-based options at Central and Western clearly provide much more field experience than the other programs, on the average nearly 200 more hours, or roughly six full 30-hour school weeks.
- All programs, except the campus-based option at Western, require students to spend a reasonably large amount of time in field work before they enter student teaching, at least 75 hours.
- On the average, elementary programs require more pre-student-teaching field work than secondary programs do, roughly 50 hours more. This is not the case at all institutions, however.
- Elementary education majors/specialists spend somewhat more time in the field than elementary teaching candidates with non-education majors. Again, however, this is not the case at two institutions.
- On the average, elementary teachers-in-training spend altogether the equivalent of about 17 full-time weeks in the field. This total ranges, however, from a low of about 10 weeks to a high of about 22 weeks.
- On the average, secondary teachers spend the equivalent of about 15 full-time weeks in the field, ranging from about 10 to about 20 weeks.

Activities in the field. The primary differences in the types of activities which students carry out in the field are those attributable to whether or not the program is field-oriented. There are some other differences, however.

The field-based programs at Central and Western involve two quarters of work at a field site. That at the University of Washington involves four quarters for elementary teachers and three quarters for secondary teachers. At Western and the University of Washington the field quarters are consecutive and usually take place at a single field site. At Central, they are not consecutive and are not necessarily in the same school. In all three cases, the final quarter consists of full-time student teaching. During the prior quarter(s), in addition to working in the classroom, students are taking required education courses, offered at the school by university faculty. There are at least two major advantages to the field-oriented approach. Obviously, student teachers have a more sustained opportunity to understand the students with whom they work and to develop their own teaching abilities. Under this arrangement, students are prepared to accept fuller and more immediate teaching responsibilites during the student teaching quarter. In addition, students and faculty can make more direct application of the other education courses that are taken simultaneously with field responsibilities. In fact, these courses often include specific assignments to be completed in the field.

All the other campus-based programs expect students in pre-student-teaching field work to receive a general orientation to the practical work of the teacher. The opportunities for sustained development of teaching skill in these short-term and very part-time assignments are limited, however. All the field work in Central's campus-based secondary program and about half of it in Washington State's secondary program take place outside the usual academic year. Therefore, opportunities for cross-fertilization between field work and other education course work are restricted. To encourage this cross-fertilization, Eastern has recently modified its program to include a limited field component in several of its required courses.

All programs have similar expectations for student teaching -- the student's gradual acceptance of additional teaching responsibility until he or she takes on a teacher's full load for some limited period, ranging from three to six weeks. In addition students are required to participate in the teacher's responsibilities outside the classroom, such as attending faculty meetings. Finally, students are encouraged to observe teachers other than their cooperating teachers. Students are expected to document all their activities including especially their plans for all lessons taught.

Field supervision. All students' field activities are supervised by both university supervisors and the teachers with whom the students work. Observations on supervision by cooperating teachers include:

- Most students are placed in schools and districts with which the universities have long-standing arrangements.
- While there are a variety of mechanisms for placing particular students with particular teachers, the decision usually is made cooperatively by university supervisors, school administrators, and the school teachers involved.
- The stability and formality of arrangements necessary for the extended field experience programs appear to provide the universities with greater input into the placement decisions than is the case with the campus-based programs, especially for the field work prior to student teaching.

- The operation of a university laboratory school at Eastern, the only such school among the five public institutions, gives the university direct and explicit control over the field work of students and of the teacher supervision provided.
- Cooperating teachers receive little or no compensation for their assistance to students. There is usually no stipend for working with students prior to student teaching. Stipends for work with student teachers range from nothing at Western to $60 at Eastern and the University of Washington.
- Education deans were generally agreed that current payments to cooperating teachers are not effective incentives but were divided on the question of whether additional incentives are necessary or the form that such incentives might take.
- Training provided to cooperating teachers is informal. It includes the sending out of written materials that describe the universities' policies and expectations for student teaching and supervision and discussions between university supervisors and cooperating teachers. More formal arrangements at Western and Central have been discontinued for financial reasons.
- Written communication to cooperating teachers includes descriptions of expected patterns of activity for student teachers and for their observation and evaluation by cooperating teachers. Deans indicated that most cooperating teachers were conscientious in their compliance with these expectations.

Observations on college supervisors include:

- There are three basic patterns for university supervision at the five public institutions:
  - -- At Central, Washington State, and Eastern most supervision is done by individuals with regular faculty status whose primary assignment is supervision.
  - -- At the University of Washington, supervisors are non-faculty; they are experienced school teachers usually supervising part-time.
  - -- At Western, there are 2.5 FTE non-faculty supervisors, but the majority of supervision is done by regular faculty as part of their teaching load.
- All universities maintain written descriptions of the responsibilities of university supervisors. These are provided to the supervisors, students, and cooperating teachers.
- All universities expect a minimum number of supervisory visits during student teaching.
  - -- At Eastern and Central supervisors visit students weekly.
  - -- At Western, weekly visits are the optimum, but a minimum of six visits is required.
  - -- At Washington State, six visits are usually made, but a minimum of three visits is required.
  - -- At the University of Washington, a minimum of three observations of a student's teaching is required in each of the last two quarters of field work for secondary teachers and three quarters for elementary teachers.

- Supervisors are expected to visit more frequently those students who are having difficulties.
- All universities maintain policies on the optimum full-time supervision load: Central -- 16; Eastern -- 18; U.W. -- 25; W.S.U. -- 16; Western -- 16. These optimums are sometimes exceeded if the need arises.
- The minimum number of supervisory visits on an optimum load, excluding those necessary for problem cases, ranges from 75 to 180 during the ten to twelve weeks of student teaching. During these visits, the supervisor must observe the student and confer with both the student and the cooperating teacher.

All the deans of education at the public institutions expressed some concern about their current systems for supervising students' field work. Many were concerned about the adequacy of funding for field supervision. Several institutions have proposed, are considering, or are experimenting with alternatives to current procedures.

- Dr. Kaltsounis, Associate Dean for Undergraduate and Professional Studies at the University of Washington, has proposed a system in which cooperating teachers are selected, trained, and paid by the universities to be the sole supervisors of student teachers.
- Dr. Katz, Dean of Eastern's School of Human Learning and Development, has proposed increased compensation of cooperating teachers judged by the University not to need assistance from a university supervisor.
- Washington State University is experimenting with a system in which principals in rural schools take on the responsibilities of the university supervisor of student teaching.

- Western and Central in their 1985-87 budget requests have both proposed demonstration projects in which formal and extensive relationships with specific public schools would be established. University faculty would provide training to teachers in the designated schools and cooperate in the redesign of the school's curriculum. These schools would then become permanent sites for extensive student field work.

Evaluation of student field work. All five public institutions have published policies and procedures for the formal evaluation of student teachers:

- Each institution has developed its own observational evaluation instrument for use by the university supervisor. These instruments all emphasize the state's generic competencies for teachers but differ in their organization and the specific indicators of good teaching which they stress.
- All institutions require the use of this instrument at least twice during student teaching, once at midterm and once at the end of the term. The final evaluation forms the basis of the institution's ultimate judgment of a student's meeting the generic competency requirements.
- In the extended field work programs, students are formally evaluated twice during each quarter in the field.
- Although specific data are not available, all institutions indicated that some student teachers are judged unsatisfactory in the field.
- The State Board of Education has recently authorized the development of a uniform observational evaluation instrument to be used in the evaluation of all student teachers in all approved programs.

V. CHARACTERISTICS OF FIRST TEACHING CERTIFICATE COMPLETERS AT FIVE PUBLIC INSTITUTIONS, 1982-83

In an attempt to gain at least some understanding of the actual results of the state's certification policies and the institutions' programs which have been approved under those policies, the collection of certain basic data on students who have completed those program was undertaken in the late summer through the early fall of 1984. This section analyzes some of those data.

A. The Design of the Study

Data were collected on all students who completed the teacher certification programs at five public universities from the fall term of 1982 through the summer term of 1983 and who subsequently applied for and received the first teaching certificate in Washington. Students at the independent institutions were not included simply because of lack of time and resources. Since the public institutions graduate over 70 percent of the teachers trained in the state, the study does include a significant proportion of the relevant population. Moreover, the study excludes individuals who received the first Washington certificate through reciprocal arrangements with other states because it was designed to focus on Washington's own teacher training institutions. The results of the study, therefore, should be read as descriptive only of the teaching candidates at the public institutions and not of students at all Washington institutions, of all individuals who became eligible to teach in Washington in 1982-83, or of all beginning teachers in the state.

Data on 1,540 students were included in the study. Appendix D includes the two forms used to collect data on these students. Basic data, those items included on the first form, were collected on all students. There are four broad categories of data included on this form:

> Certification data. Included here are basic demographic information and information on the type of certificate granted and the subjects and levels for which the certificate is endorsed. This information was collected from the Certification Section at the Washington Office of the Superintendent of Public Instruction (OSPI).
>
> Academic data. Included are dates of graduation and program completion, cumulative and major grade point averages, and student majors and minors. This information was collected directly from student records in the universities' certification and registrar's offices.
>
> Admissions data. Included are students' high school grade point averages and their composite verbal and quantitative scores on the Washington Pre-College Test, the test most frequently taken by Washington high school students who plan to enter postsecondary programs. These data were provided directly by the Washington Pre-College Testing Program.
>
> Initial employment data. Information on students' employment status in the fall of 1983 was submitted by the institutions' placement offices to the Professional Education Section of OSPI. In some instances, more complete information was collected at the institutions themselves.

In addition to this basic data for all students, a transcript analysis was completed for some of the students using a form similar to the second form included in Appendix D. This group of students included a 20 percent random sample of all students endorsed as elementary teachers and 100 percent of the students endorsed as secondary teachers of biology, English, history/government, mathematics, and social studies. All of each sampled student's university course work was classified in ten broad subject categories according to the departments by which the courses are offered. Within each category, courses completed were further classified as education-related or non-education-related, depending upon the course titles and catalog descriptions. All courses explicitly noted as being for teachers or about education and all courses offered in education departments were classified as education-related. This information was collected directly from students' transcripts obtained in each institution's certification and registrar's offices.

B. Demographic Characteristics

Tables 10, 11, 12, and 13 provide some basic demographic data on the individuals first certified through the five public institutions. Table 10 reports information on the age of certificate earners:

- Only about a third of the students were certified at the "traditional" age of college graduation, 21 or 22 years old. In fact, the percentage of students certified between 23 and 25 years of age is larger than that for students 22 years old and younger.
- Overall, nearly a third of the students certified were over 25 years old; about eight percent were over 35.
- Washington State University's age pattern is significantly different from that at the other institutions, with nearly 91 percent of its certificate earners 25 years old or younger. This finding reflects the fact that on the average, Washington State University enrolls younger students than any other public four-year institution.

Table 10 also reports the total numbers of students trained at each institution:

TABLE 10: AGE AT PROGRAM COMPLETION

	AGE			TOTAL # OF	NUMBER OF STUDENTS IN EACH AGE GROUP						
					0-22	23-25	26-30	31-35	36-40	41-50	51+
	MEAN	LOWEST	HIGHEST	STUDENTS	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL
ALL INSTITUTIONS	26.16	20.07	59.89	1540	33.25	37.14	14.29	7.14	4.42	3.44	0.32
INSTITUTION											
CMU	26.87	20.82	49.33	363	33.06	31.68	14.05	10.19	5.23	5.79	
EMU	27.43	20.90	59.89	324	27.78	37.04	12.65	9.88	6.48	5.56	0.62
UM	26.98	21.11	50.18	248	26.21	36.69	18.15	7.26	8.06	3.63	
MSU	23.49	20.72	37.93	255	56.08	35.69	5.49	1.96	0.78		
WMU	25.61	20.07	54.17	350	26.86	44.29	19.71	5.14	1.71	1.43	0.86

- The research universities, University of Washington and Washington State University, trained only about a third of the first teaching certificate earners even though they enrolled over 60 percent of the undergraduates attending public, four-year institutions in the state.
- The proportion of undergraduate education represented by teacher preparation at each institution can be roughly gauged by comparing the number of certificate earners with the total number of undergraduate degrees granted in 1982-83. Certificate earners as a percentage of all undergraduate degrees equal:

  25 percent at Central Washington University;
  24 percent at Eastern Washington University;
  5 percent at University of Washington;
  9 percent at Washington State University;
  23 percent at Western Washington University; and,
  12 percent at all institutions combined.

Table 11 reports the sex of certificate earners:

- Overall, 70 percent of certificate earners were women, ranging from 64 percent at Eastern to 74 percent at Washington State University.
- Eighty-five percent of elementary certificate earners were women. According to data provided by OSPI's Office of Educational Equity, 74 percent of all public elementary teachers in 1983-84 were women.
- Secondary certificate recipients overall were about half women. At two institutions, University of Washington (55 percent) and Washington State University (60 percent), over half of the secondary endorsement earners were women. By contrast, only 38 percent of the public secondary school teachers were women in 1983-84.

Table 12 reports the numbers of secondary subject endorsements by sex:

TABLE 11: NUMBER OF STUDENTS BY SEX AND ENDORSEMENT LEVEL

				INSTITUTION									
		ALL SCHOOLS		CWU		EWU		UW		WSU		WWU	
		SEX		SEX				SEX				SEX	
		M	F	M	F	M	F	M	F	M	F	M	F
ALL STUDENTS	COUNT	479	1061	107	256	118	206	68	180	67	188	119	231
ELEMENTARY ENDORSEMENTS	COUNT	124	703	27	185	33	137	19	120	18	117	27	144
SECONDARY ENDORSEMENTS	COUNT	331	322	70	54	85	69	44	54	47	70	85	75
K-12 ENDORSEMENTS	COUNT	33	94	16	63	1	3	6	9	2	7	8	12

TABLE 12: SECONDARY CERTIFICATE ENDORSEMENTS BY SEX

	ALL INSTITUTIONS		INSTITUTION									
			CWU		EWU		UW		WSU		WWU	
	SEX		SEX		SEX		SEX		SEX		SEX	
	F	M	F	M	F	M	F	M	F	M	F	M
	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT
FIELD OF ENDORSEMENT												
AGRICULTURE	7	10			1				6	10		
ART	17	7	1		8	3	2		2		4	4
BEHAVIORIAL SCIENCES	3	4					3	4				
BILINGUAL EDUCATION	2						2					
BIOLOGICAL SCIENCE	5	14			2	7	2	4			1	3
BUSINESS AND OFFICE EDUC	28	13	4	4	9	5	4	2	2	2	9	
CHEMISTRY	1	3					1	3				
DISTRIBUTIVE EDUCATION	2	4	1	2	1	2						
EARTH SCIENCE		4				2		2				
ECONOMICS EDUCATION		4						3				1
ENGLISH / LANGUAGE ARTS	51	37	6	3	10	10	10	7	12	4	13	13
ENGLISH AS A 2ND LANG	1						1					
FOREIGN LANGUAGES	16	3	7		2	1	1	1	3		3	1
FRENCH	3	1					2	1			1	
GERMAN	6	1					4	1			2	
HEALTH EDUCATION	25	14	2	3	8	5			14	3	1	3
HISTORY / GOVERNMENT	10	18					7	8			3	10
HOME ECONOMICS	37	1	5		12				9		11	1
INDUSTRIAL ARTS	4	39		10	1	14				1	3	14
JOURNALISM		1						1				
LEARNING RESOURCES	1	1	1									1
MATHEMATICS	21	21	4	2	6	4	3	8	5	4	3	3
MUSIC	8	15			1	8	3				4	7
NATURAL AND GENERAL SCIENCE	22	37	5	8	3	12	1	2	12	10	1	5
PHILOSOPHY		1						1				
PHYSICAL EDUCATION	89	104	15	30	26	28	11	6	27	23	10	17
PHYSICS		5						3				2
READING	1				1							
SOCIAL STUDIES & SOCIAL SCIENCES	47	75	3	9	13	24	9	12	16	17	6	13
SPANISH	5	1					1				4	1
SPECIAL EDUCATION	4	4	2	1							2	3
SPEECH AND DRAMA	7	1					7	1				
TRAFFIC SAFETY	3	15	1	7	2	8						

- There is evidence of sex predominance in several of the largest fields, a predominance which accords with common stereotypes of gender preference for subject matter. Fields in which two-thirds of the endorsements were earned by women include:

    Home economics (97%)
    Foreign languages (83%)
    Art (71%)
    Business and office education (68%)

  Fields in which two-thirds or more of the endorsements were earned by men include:

    Industrial arts (91%)
    Traffic safety (83%)
    Natural sciences (68%)

- Nevertheless, all of the largest fields included teachers of both sexes and several were reasonably balanced:

    Mathematics (50% women)
    Physical education (46% women)
    English (58% women)
    Social sciences (37% women)

Table 13 reports on the ethnicity of certificate earners. In an attempt to get as complete a picture of ethnicity as possible, several sources of information were used -- employers reports of ethnicity to OSPI, student reports of ethnicity to OSPI on the employment status survey, and institutions' own records of student ethnicity. No one was counted into an ethnic category unless one or more of the these sources definitely confirmed that categorization. As a result, the ethnicity of 282 individuals, about 18 percent of the certificate earners, is classified as unknown. According to officials at the universities, it is probably reasonably safe to classify their unknowns as white. Because such small numbers of minority students are reported and such a comparatively large

TABLE 13: NUMBER OF STUDENTS BY ETHNIC GROUP AND ENDORSEMENT LEVEL

		ALL STUDENTS	ELEMENTARY ENDORSEMENTS	SECONDARY ENDORSEMENTS	K-12 ENDORSEMENTS
		COUNT	COUNT	COUNT	COUNT
ALL SCHOOLS		1540	827	653	127
	ETHNICITY				
ALL SCHOOLS	AM INDIAN	10	5	5	0
	ASIAN	25	18	6	2
	BLACK	11	5	6	2
	HISPANIC	16	11	5	0
	OTHER	6	3	2	1
	UNKNOWN	282	151	114	30
	WHITE	1190	634	515	92
INSTITUTION	ETHNICITY				
CWU	AM INDIAN	2	1	1	0
	ASIAN	4	3	0	2
	BLACK	5	3	2	2
	HISPANIC	6	5	1	0
	OTHER	1	0	0	1
	UNKNOWN	98	58	31	20
	WHITE	247	142	89	54
EWU	AM INDIAN	6	4	2	0
	ASIAN	2	2	0	0
	BLACK	3	0	3	0
	HISPANIC	2	2	0	0
	OTHER				
	UNKNOWN	5	3	2	0
	WHITE	306	159	147	4
UW	AM INDIAN				
	ASIAN	12	8	4	0
	BLACK	2	1	1	0
	HISPANIC	5	3	2	0
	OTHER				
	UNKNOWN	78	42	33	3
	WHITE	151	85	58	12
WSU	AM INDIAN	1	0	1	0
	ASIAN	1	0	1	0
	BLACK				
	HISPANIC				
	OTHER				
	UNKNOWN	88	42	43	5
	WHITE	165	93	72	4
WWU	AM INDIAN	1	0	1	0
	ASIAN	6	5	1	0
	BLACK	1	1	0	0
	HISPANIC	3	1	2	0
	OTHER	5	3	2	0
	UNKNOWN	13	6	5	2
	WHITE	321	155	149	18

number have not reported their ethnicity in any of the three sources of ethnic information, however, the results should be treated as indicative of but not absolutely conclusive about minority representation.

- Assuming all unknowns are white, only 4.4 percent of the certificate earners were known to be minorities. If all unknowns are excluded, still only 5.4 percent are minorities.
- A slightly higher proportion of elementary teachers (5.1 percent) were minorities than secondary (3.6 percent) and K-12 (3.9 percent) teachers.

Table 14 puts the ethnicity of certificate earners in context by comparing it to the ethnicity of several other groups of Washingtonians:

- Minorities are underrepresented among certificate earners when compared with baccalaureate degree recipients, undergraduate enrollments, school children, current public school teachers, and all state residents.
- The contrast is greatest with school children, the group that these teachers will serve. According to the National Center for Education Statistics, the proportion of minority children in Washington public schools has recently increased dramatically, doubling between 1970 and 1980 from 7 percent to 14 percent (Source: The Condition of Education, 1984).
- Every minority group is underrepresented among certificate earners on all comparisons with the exception of Hispanics when compared to baccalaureate degree recipients and current teachers.
- Overall, Blacks and Asians appear to be the most consistently underrepresented although Hispanics are more underrepresented than Asians when compared with school children and all state residents.

Table 14

ETHNIC GROUP COMPARISONS

	Asian	Black	Hispanic	Indian	Other	White
Certificate earners, WA public universities, 1982-83	1.6%	.7%	1.0%	.6%	.4%	95.6%[a]
Bachelor's degree earners, WA public universities, 1982-83[b]	4.9%	2.1%	1.0%	.8%	NR[g]	91.4%
Undergraduate enrollments, WA 4-year Public, fall 1982[c]	5.9%	2.4%	1.2%	1.0%	NR	89.5%
K-12 school enrollment, WA public and private, fall 1983[d]	4.4%	3.6%	3.6%	2.3%	NR	86.1%
Classroom teachers by FTE's, WA public schools, October 1983[e]	1.9%	1.9%	1.0%	.7	NR	94.6%
All Washington residents, estimates, 1983[f]	3.1%	2.7%	3.0%	1.5%	.5%	89.3%

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[a] Includes those known to be white and those whose ethnicity is unknown.

[b] Source: HEGIS Survey, Degrees and Other Formal Awards Conferred.

[c] Source: HEGIS Survey, Fall Enrollment and Compliance Report for Institutions of Higher Education.

[d] Source: Minority Enrollments in Public and Private Schools, Office of the Superintendent of Public Instruction, October 1983.

[e] Source: Selected Statistics Related to School Desegregation on the Basis of Race and Sex, Office of the Superintendent of Public Instruction, November 1984.

[f] Source: Washington State Office of Financial Management, Special Report No. 72.

[g] Data not reported in this category.

Table 15 compares minority certificate earners to minority baccalaureate degree recipients at each of the five institutions.

Table 15

PERCENTAGE OF MINORITY CERTIFICATE EARNERS AND BACCALAUREATE DEGREE RECIPIENTS AT FIVE PUBLIC UNIVERSITIES, 1982-83

Institution	Certificate Earners	Baccalaureate Recipients
CWU	4.9%	3.5%
EWU	4.0%	11.6%
UW	7.7%	12.7%
WSU	.8%	5.2%
WWU	4.6%	4.6%

- The underrepresentation of minorities when compared to baccalaureate recipients appears to occur at the two research universities and Eastern, the institutions with the highest proportions of minorities among their graduates. The minority underrepresentation at Eastern and the University of Washington occurs primarily among Asians and Blacks; at Washington State University it occurs among all ethnic groups.

C. Certification Characteristics

Type of certificate granted. The first teaching certificate granted under the 1978 standards is called an initial certificate; that granted under the 1961 standards is called a provisional certificate. Table 16 reports the percentages of each type of certificate granted at the five institutions in 1982-83. Institutions do not admit students to programs until they are approved. Moreover, students admitted to previously approved programs must meet the standards of those old programs and will be granted the type of certification appropriate to those programs. Because approval under the 1978 standards was not granted to Eastern and Central until 1982 and to Washington State until 1983, and because students are normally admitted to programs before their senior year, students at these institutions did not complete the new programs. At the University of Washington and Western, some students entered teacher preparation before the new programs took effect. This implies that:

Table 16

TYPE OF FIRST TEACHING CERTIFICATE GRANTED, 1982-83

Institution (Date of 1978 Standards Approval)	Percentage of Students by Certificate Type: Initial, 1978 Standards	Provisional, 1961 Standards
All Institutions	25%	75%
Central Washington University (1982)	0%	100%
Eastern Washington University (1982)	1%	99%
University of Washington (1981)	88%	12%
Washington State University (1983)	0%	100%
Western Washington University (1981)	45%	55%

- Many of the students included in this survey did not meet the new and often higher requirements that were the result of the 1978 standards.
- In particular, the higher admission test score requirements at Central and Washington State University and the higher gpa requirement at Washington State University and Eastern did not take effect until 1984-85. Higher gpa requirements at Western and Central will take effect in 1985-86. And the gpa required at the University of Washington has increased as the all-undergraduate gpa has improved.

Level of certificates. Table 11 also allows us to make some general observations about the levels of endorsement for these certificate earners:

- Overall, 53 percent received elementary endorsement; 42 percent received secondary endorsement, and eight percent received K-12 endorsement. According to OSPI, in 1983-84, 46 percent of public school teachers were employed in elementary schools, 44 percent in secondary schools, and 10 percent in other positions.
- Major departures from this overall pattern occurred at Central Washington University where nearly twice as many students earned elementary endorsements as earned secondary endorsements, and Western Washington University, where almost equal numbers of students earned elementary and secondary endorsements.
- Sixty-seven individuals were endorsed at more than one level. Nearly all of these dual-level endorsements were for both elementary and K-12. Fifty-two of these individuals were prepared at Central Washington University.

Fields of endorsement. Tables 17 and 18 report the fields of endorsement of secondary and K-12 teachers. Of the 827 elementary certificate earners, 821 were endorsed as general elementary classroom teachers. The certificates of these general elementary teachers are often endorsed in particular subjects to reflect the required area of academic emphasis. Because some institutions do not recommend elementary teachers for these supporting endorsements and because more detailed information on these students' majors and other course work will be analyzed subsequently, these supporting endorsements have not been tabulated. Of the six individuals certified at the elementary level without a general classroom endorsement, five were endorsed in music (four from the University of Washington and one from Western) and one in physical education (from Western).

Table 17

SUBJECT ENDORSEMENTS OF SECONDARY SCHOOL CERTIFICATE EARNERS IN FIVE PUBLIC INSTITUTIONS, 1982-83

	Percent of Secondary Certificate Earners					
	All Institutions	CWU	EWU	UW	WSU	WWU
Education-Related Fields	2.1%	3.2%	.6%	3.1%	--	3.8%
Bilingual Education[a]	.3%	--	--	2.0%	--	--
English Second Language[b]	.2%	--	--	1.0%	--	--
Learning Resources[a]	.3%	.8%	--	--	--	.6%
Reading[a]	.2%	--	.6%	--	--	--
Special Education[a]	1.2%	2.4%	--	--	--	3.1%
English/Language Arts[a]	14.3%	8.1%	14.9%	18.4%	13.7%	16.9%
Foreign Languages	5.2%	5.6%	1.9%	10.2%	2.6%	6.9%
Foreign Language[c]	2.7%	5.6%	1.9%	2.0%	2.6%	1.9%
French[b]	.6%	--	--	3.1%	--	.6%
German[b]	.9%	--	--	4.1%	--	1.3%
Spanish[b]	.9%	--	--	1.0%	--	3.1%
Humanities and Arts	7.3%	.8%	12.9%	6.1%	1.7%	11.9%
Art[a]	3.3%	.8%	5.8%	2.0%	1.7%	5.0%
Music[a]	3.8%	--	7.1%	3.1%	--	6.9%
Philosophy[b]	.2%	--	--	1.0%	--	--
Mathematics[a]	6.0%	4.0%	5.2%	11.2%	7.7%	3.8%
Natural Sciences[d]	13.2%	10.5%	16.2%	15.3%	17.9%	6.3%
Natural[c]/General[b] Science	10.4%	10.5%	15.6%	3.1%	17.9%	4.3%
Biology[b]	1.7%	--	.6%	6.1%	--	2.5%
Chemistry[b]	.6%	--	--	4.1%	--	--
Earth Science[b]	.3%	--	--	2.0%	--	--
Physics[b]	.8%	--	--	3.1%	--	1.3%

Table 17
(Continued)

SUBJECT ENDORSEMENTS OF SECONDARY SCHOOL CERTIFICATE EARNERS IN FIVE PUBLIC INSTITUTIONS, 1982-83

	Percent of Secondary Certificate Earners					
	All Institutions	CWU	EWU	UW	WSU	WWU
Social Sciences[d]	21.3%	9.7%	24.0%	27.6%	28.2%	18.8%
Soc. Studies[b]/Soc. Sci.[c]	18.6%	9.7%	24.0%	21.4%	28.2%	11.9%
Behavioral Studies[b]	1.2%	--	--	8.2%	--	--
Economics/Geography[b]	.6%	--	--	3.1%	--	.6%
History/Government[b]	4.3%	--	--	15.3%	--	8.1%
Speech/Drama/Communications[e]	1.2%	--	--	8.2%	--	--
Journalism[b]	.2%	--	--	1.0%	--	--
Speech/Drama[b]	1.1%	--	--	7.1%	--	--
Other Fields[d]	55.1%	59.7%	68.2%	23.5%	77.8%	41.9%
Agriculture[a]	2.5%	--	--	--	13.7%	--
Business Ed.[a]	6.3%	6.5%	9.1%	6.1%	3.4%	5.6%
Distributive Ed.[a]	.9%	2.4%	1.9%	--	--	--
Health Ed.[a]	5.9%	4.0%	8.4%	--	14.5%	2.5%
Home Economics[a]	5.8%	4.0%	8.4%	--	7.7%	6.9%
Industrial Arts[a]	6.5%	8.1%	9.1%	--	.8%	11.3%
Physical Education[a]	29.2%	36.3%	33.8%	17.3%	42.7%	16.9%
Traffic Safety[a]	2.7%	6.5%	6.4%	--	--	--
Total Number of Endorsements	880	136	236	143	181	184
Total Number of Certificate Earners	653	124	154	98	117	160
Double Endorsement Earners	213(189)[f]	12	76	39(22)[f]	62	24(17)[f]
Triple Endorsement Earners	7(4)[f]	0	3	3(0)[f]	1	0

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[a] Endorsement on both the Provisional (1961 Standards) and Initial (1978 Standards) Certificates.

[b] Endorsement on Initial Certificates only.

[c] Endorsement on Provisional Certificates only.

[d] Individuals with more than one endorsement in this category have been counted only once in the percentage for the entire category.

[e] Subjects in this category were endorsed under English/Language Arts on the Provisional Certificate.

[f] Parenthetical figures represent multiple endorsements excluding those within the social and natural sciences on the initial certificate.

Table 18

FIELDS OF ENDORSEMENT OF K-12 TEACHERS IN FIVE PUBLIC INSTITUTIONS, 1982-83

	Number of Students					
Field	All Institutions	CWU	EWU	UW	WSU	WWU
Art	12	3	--	7	--	2
Foreign Language	1	--	--	1	--	--
Music	30	17	--	3	6	4
Physical Education	18	--	1	--	3	14
Social Studies	1	--	--	1	--	--
Special Education	71	60	4	7	--	--

Observations on the endorsements of secondary teachers include:

- Physical education (29.2 percent) and social studies (18.6 percent) were the most frequent endorsements. Physical education is especially predominant at Central, Eastern, and Washington State.
- Very few secondary teachers are endorsed in education-related fields.
- All institutions certify reasonably large numbers of students in almost all fields. There is little evidence of any specialization in particular academic subjects to the exclusion of others.
- All institutions except the University of Washington prepare a substantial number of teachers in the applied and vocational fields.
- About one-third of certificate earners are endorsed in more than one field. Over half the teachers from Eastern and Washington State have multiple endorsements while fewer than 10 percent at Central do, however.

Table 18 reports the fields of endorsement for K-12 teachers:

- All institutions prepare K-12 specialists, but not all of them do so in the same fields.
- Some institutions prepare teachers as K-12 specialists rather than as secondary teachers in particular fields. Central prepares K-12 but no 7-12 music teachers. Similarly, the University of Washington prepares K-12 but no 7-12 special education teachers.

Time between the bachelor's degree and the teaching certificate. Table 19 reports the length of the interval between the time that a student receives the first bachelor's degree and that at which he or she completes the teacher certification program.

Table 19: TIME BETWEEN BACHELOR'S DEGREE & CERTIFICATION PROGRAM COMPLETION

		ALL SCHOOLS	INSTITUTION				
			CWU	EWU	UW	WSU	WWU
TIME INTERVAL (YEARS)	MEAN	0.948	0.781	1.133	1.652	0.314	0.913
TIME INTERVAL (YEARS)	LOWEST	0.000	0.000	0.000	0.000	0.000	0.000
TIME INTERVAL (YEARS)	HIGHEST	37.083	27.000	37.083	22.250	15.333	21.750
TOTAL NO. OF STUDENTS	COUNT	1540	363	324	248	255	350
DISTRIBUTION OF STUDENTS							
NO TIME INTERVAL	% OF TOTAL	74.740	90.083	86.420	21.774	80.392	81.429
1 TO 3 MONTHS	% OF TOTAL	3.247		0.309	18.145	1.176	0.286
4 TO 6 MONTHS	% OF TOTAL	4.416	0.551	0.309	17.339	7.843	0.571
7 TO 9 MONTHS	% OF TOTAL	2.338		0.309	8.871	3.922	0.857
10 TO 12 MONTHS	% OF TOTAL	1.883	0.275	0.309	8.468	1.176	0.857
1 TO 2 YEARS	% OF TOTAL	2.403	1.377	0.926	4.435	2.353	3.429
2 TO 3 YEARS	% OF TOTAL	2.208	0.826	2.160	4.435		3.714
3 TO 5 YEARS	% OF TOTAL	2.987	1.377	3.086	6.452	1.569	3.143
5 TO 10 YEARS	% OF TOTAL	3.052	3.030	1.543	6.855	1.176	3.143
OVER 10 YEARS	% OF TOTAL	2.727	2.479	4.630	3.226	0.392	2.571

- The pattern at all institutions except the University of Washington is similar.
  - -- A large majority of students at these four institutions, about 85 percent on average, complete the first bachelor's degree and the teaching certificate simultaneously.
  - -- About 11 percent of the certificate earners in these four universities complete the teacher preparation programs a year or more after receiving the bachelor's degree.
  - -- All four institutions operate reasonably active post-baccalaureate certification programs but the pattern of the program at Washington State University differs from that at the regional universities. At Washington State nearly all the post-baccalaureate certificate earners complete their programs within the first year; at the regionals most post-baccalaureate students finish after the first year with about half of these students (5.8 percent of the total) becoming certified five or more years after the degree.
- The markedly different pattern at the University of Washington -- only a fifth finish the degree and the certificate simultaneously; only three-fourths finish by the end of the first post-baccalaureate year, and over 10 percent finish five or more years after the degree -- can be accounted for by two features of the University's programs:
  - -- The degree requirements allow all students to take the degree before completing the teacher preparation program. In fact, the College of Education actively encourages students to complete degree requirements before undertaking student teaching. That such a large proportion are able to do so suggests that, while it

is theoretically possible to complete degree and certificate requirements within the 180 quarter hour minimum degree requirement, few students are able to do so in practice. One of the results of the three- and four-quarter long field programs at the University, then, is that they effectively increase the amount of college work needed to become certified well beyond the 180 quarter hour minimum for graduation.

-- The University operates a specially designed and explicitly publicized post-baccalaureate certification program.

- Data reported later in this document on the total amount of college work taken before certification indicate that certification requirements at the other four institutions also have the effect of increasing the college credit requirements beyond graduation minimums.

D. Students' Academic Characteristics

Cumulative grade point averages of certificate earners. Table 20 reports the college grade point averages of certificate earners and compares them to graduates from that same institution during 1982-83. Tables E-1, E-2, and E-3 in the appendix report this information for elementary, secondary, and K-12 certificate earners. Several observations about the meaning of these data are necessary.

1. The cumulative gpa collected for students who completed the degree and the certificate simultaneously is that upon which the graduation decision at that institution is based. At Eastern, it is the gpa of all undergraduate work. At the other four institutions, it is the gpa

Table 20: CUMULATIVE GPA COMPARISONS

		INSTITUTION				
		CWU	EWU	UW	WSU	WWU
ALL GRADUATES	AVERAGE GPA	2.960	3.080	3.050	2.870	3.000
CERTIFICATE EARNERS	AVERAGE GPA	3.104	3.108	3.231	3.063	3.109
	LOW GPA	2.100	2.040	2.220	2.080	2.360
	HIGH GPA	3.970	3.940	3.910	3.980	3.980
BREAKDOWN BY THE ALL-GRAD AVERAGE GPA						
# ABOVE ALL-GRAD AVG	% OF ALL C-EARNERS	60.882	53.086	71.371	67.059	60.571
# BELOW ALL-GRAD AVG	% OF ALL C-EARNERS	39.118	46.914	28.629	32.941	39.429
QUINTILE BREAKDOWN						
# IN BOTTOM QUINT	% OF ALL C-EARNERS	9.366	17.593	10.484	9.020	9.714
# IN SECOND QUINT	% OF ALL C-EARNERS	17.355	20.062	18.145	14.902	17.143
# IN THIRD QUINT	% OF ALL C-EARNERS	20.661	16.975	19.355	19.216	26.286
# IN FOURTH QUINT	% OF ALL C-EARNERS	23.691	21.296	21.774	27.059	25.429
# IN TOP QUINT	% OF ALL C-EARNERS	28.926	24.074	30.242	29.804	21.429

of all work at that institution only. This was done because the comparison data for other graduates were calculated in that same way.

2. The cumulative gpa collected for post-baccalaureate certificate earners includes all work completed at the baccalaureate-degree-granting institution and all work completed since graduation. Since the gpa for the simultaneous completers includes both education and non-education course work, it was deemed appropriate to include both types for post-baccalaureate students as well.

3. Because the data available on graduates were somewhat different at each institution, the comparison groups vary from institution to institution:

   -- At Central, the average and distribution comparisons are to all students who graduated in winter, spring, and summer quarters of 1983.

   -- At Eastern, the average and distribution comparisons are to all students who graduated in fall quarter of 1982 and winter, spring, and summer quarters of 1983.

   -- At the University of Washington, the comparison average gpa is that for all undergraduates. The distribution comparison is to all seniors in the spring quarter of 1983.

   -- At Washington State University, the average and distribution comparisons are to all seniors in the spring semester of 1983.

   -- At Western, the comparison average gpa reported is the median, that is, the gpa at the 50th percentile, of all seniors in the spring quarter of 1983. The distribution comparison is to the same group of seniors.

4. The bottom half of Table 20 reports the percentage of certificate earners with cumulative gpa's that would have placed them in each fifth of the comparison class. Thus, for example, about 9.4 percent of Central's certificate earners had gpa's lower than four-fifths of the Central graduates in winter, spring, and summer quarters of 1983. About 28.9 percent had gpa's above the gpa's of four-fifths of this same group of graduates.

5. Because grading practices, graduation requirements, and students vary among institutions it is not meaningful to calculate a single average cumulative gpa for all graduates or all certificate earners at all five institutions. Nor is it meaningful to compare gpa's at one institution to those at another. But it is possible to summarize for all five institutions combined the percentages of students who fall into the various class rankings at their own institutions:

Table 21

CUMULATIVE GPA COMPARISONS FOR CERTIFICATE EARNERS
AT ALL FIVE PUBLIC INSTITUTIONS, 1982-83

	Percent of Students by Type of Endorsement			
	Elem.	Sec.	K-12	All
At or above all-grad average	66%	57%	69%	62%
Below all-grad average	34%	43%	31%	38%
In bottom fifth of all grads	9%	14%	5%	11%
In second fifth of all grads	16%	20%	14%	18%
In third fifth of all grads	20%	21%	27%	21%
In fourth fifth of all grads	25%	22%	22%	24%
In top fifth of all grads	30%	23%	32%	27%

Observations:

- On this one measure of academic ability, teacher certification programs appear to attract a somewhat more academically talented group of students than is available in each institution as a whole.
- The proportion of certificate earners with gpa's high enough to place them in the top fifth of their institution's graduating classes during the year exceed 20 percent at every university.
- Every institution certified some students with gpa's low enough to place them in the bottom fifth of their institution's graduating classes. At only one university, however, did the proportion of the students in the bottom fifth of the class exceed 11 percent, Eastern with 17.6 percent.
- The systematic differences between Eastern and the four other institutions may be partly the result of differences in the definition of cumulative gpa. Eastern's gpa includes all college work; that at the other four institutions includes only that work completed at the recommending institution.
- Overall, elementary certificate earners had somewhat higher gpa's than secondary certificate earners. This is the case at each of the five institutions, but the difference between these two groups of students is smallest at the University of Washington.
- Central was most successful in attracting high gpa students into elementary teaching.
- Washington State and the University of Washington were most successful in attracting high gpa students into secondary teaching.

Major fields of study. Tables 22, 23, and 24 indicate the majors of students with elementary, secondary, and K-12 endorsements. The majors reported in these tables are the undergraduate majors recorded on student's transcripts and in the students's records maintained in the institutions' certification offices. The few students with master's degrees were also considered to have a major in the field of the degree. Because a small number of students had majors in two fields, the percentages in each column exceed 100 percent. The category "Other Fields" in these tables includes agriculture, business, distributive education, home economics, industrial arts, and speech and hearing science.

Observations about the majors of elementary teachers include:

- A preponderance of students at all institutions except the University of Washington major in one of four fields -- early childhood, elementary education, reading, or special education.
- As a result, at these four institutions there is relatively little diversity in the academic backgrounds of certificate earners.
- In addition, all four of the most popular fields are oriented toward pedagogy. As a result, relatively few of the elementary certificate earners at these four institutions have studied in depth an academic subject that they will teach to elementary school students.
- The University of Washington has to a great extent prevented the concentration of majors and has encouraged students to major in academic subjects by limiting permissable education-related undergraduate majors for elementary certification to only two fields -- bilingual education and English as a second language.

Table 22: MAJORS OF STUDENTS ENDORSED AS GENERAL ELEMENTARY CLASSROOM TEACHERS

	INSTITUTION					
	ALL INSTITUTIONS	CWU	EWU	UW	WSU	WWU
	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS
TOTAL NUMBER OF STUDENTS	821	212	170	135	135	169
ALL EDUCATION-RELATED FIELDS	67.235079	92.452830	69.411765	8.148148	77.037037	72.781065
--BILINGUAL EDUCATION AND ESL	2.192448	2.358491	1.176471	8.148148	0.000000	0.000000
--EARLY CHILDHOOD & CHILD DEVEL	13.032887	19.339623	10.588235	0.000000	27.407407	6.508876
--ELEMENTARY EDUCATION	20.828258	46.226415	0.588235	0.000000	0.000000	42.603550
--LEARNING RESOURCES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--READING	12.302071	0.000000	40.588235	0.000000	23.703704	0.000000
--SPECIAL EDUCATION	19.123021	25.471698	15.882353	0.000000	26.666667	23.668639
ENGLISH & LANGUAGE ARTS	4.993910	0.943396	4.705882	14.814815	4.444444	2.958580
FOREIGN LANGUAGES	1.583435	0.943396	0.588235	5.925926	1.481481	0.000000
HEALTH EDUCATION	0.121803	0.000000	0.588235	0.000000	0.000000	0.000000
ALL OTHER HUMANITIES	3.775883	1.886792	1.764706	8.148148	4.444444	4.142012
--ART	2.557856	0.943396	1.176471	6.666667	2.962963	2.366864
--MUSIC	0.852619	0.471698	0.588235	0.740741	1.481481	1.183432
--OTHERS	0.365408	0.471698	0.000000	0.740741	0.000000	0.591716
MATH AND COMPUTER SCIENCE	1.705238	0.000000	5.882353	1.481481	0.740741	0.591716
NATURAL SCIENCES	1.948843	0.471698	2.941176	3.703704	1.481481	1.775148
PHYSICAL EDUCATION	2.192448	0.471698	4.117647	0.000000	4.444444	2.366864
SOCIAL AND BEHAVIORAL SCIENCES	13.154689	6.603774	4.117647	42.962963	8.888889	10.059172
SPEECH, DRAMA & COMMUNICATIONS	3.045067	0.000000	5.882353	9.629630	0.000000	1.183432
OTHER FIELDS	3.166870	0.471698	1.764706	9.629630	0.000000	5.325444

Table 23: MAJORS OF STUDENTS CERTIFIED TO TEACH AT THE SECONDARY LEVEL

	INSTITUTION					
	ALL INSTITUTIONS	CWU	EWU	UW	WSU	WWU
	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS
TOTAL NUMBER OF STUDENTS	653	124	154	98	117	160
ALL EDUCATION-RELATED FIELDS	1.071975	3.225806	1.298701	1.020408	0.000000	0.000000
--BILINGUAL EDUCATION AND ESL	0.306279	0.806452	0.000000	1.020408	0.000000	0.000000
--EARLY CHILDHOOD & CHILD DEVEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--ELEMENTARY EDUCATION	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--LEARNING RESOURCES	0.153139	0.000000	0.649351	0.000000	0.000000	0.000000
--READING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--SPECIAL EDUCATION	0.459418	2.419355	0.000000	0.000000	0.000000	0.000000
ENGLISH & LANGUAGE ARTS	10.413476	5.645161	8.441558	15.306122	5.982906	16.250000
FOREIGN LANGUAGES	4.900459	5.645161	0.649351	11.224490	1.709402	6.875000
HEALTH EDUCATION	1.531394	4.838710	1.298701	0.000000	0.000000	1.250000
ALL OTHER HUMANITIES	7.044410	1.612903	10.389610	5.102041	1.709402	13.125000
--ART	2.603369	0.806452	4.545455	1.020408	0.854701	4.375000
--MUSIC	3.522205	0.000000	5.194805	3.061224	0.854701	6.875000
--OTHERS	0.918836	0.806452	0.649351	1.020408	0.000000	1.875000
MATH AND COMPUTER SCIENCE	4.747320	4.838710	4.545455	6.122449	5.128205	3.750000
NATURAL SCIENCES	9.341501	11.290323	6.493506	14.285714	12.820513	5.000000
PHYSICAL EDUCATION	27.565084	36.290323	31.818182	15.306122	36.752137	17.500000
SOCIAL AND BEHAVIORAL SCIENCES	14.701378	10.483871	11.688312	22.448980	13.675214	16.875000
SPEECH, DRAMA & COMMUNICATIONS	2.909648	2.419355	3.246753	10.204082	0.854701	0.000000
OTHER FIELDS	21.133231	20.967742	25.974026	6.122449	23.931624	23.750000

Table 24: MAJORS OF STUDENTS WITH K-12 ENDORSEMENTS

	INSTITUTION					
	ALL INSTITUTIONS	CWU	EWU	UW	WSU	WWU
	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS	% OF STUDENTS
TOTAL NUMBER OF STUDENTS	127	79	4	15	9	20
ALL EDUCATION-RELATED FIELDS	50.393701	75.949367	100.000000	0.000000	0.000000	0.000000
--BILINGUAL EDUCATION AND ESL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--EARLY CHILDHOOD & CHILD DEVEL	1.574803	2.531646	0.000000	0.000000	0.000000	0.000000
--ELEMENTARY EDUCATION	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--LEARNING RESOURCES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--READING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
--SPECIAL EDUCATION	50.393701	75.949367	100.000000	0.000000	0.000000	0.000000
ENGLISH & LANGUAGE ARTS	0.787402	0.000000	0.000000	6.666667	0.000000	0.000000
FOREIGN LANGUAGES	0.787402	0.000000	0.000000	6.666667	0.000000	0.000000
HEALTH EDUCATION	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ALL OTHER HUMANITIES	32.283465	24.050633	0.000000	66.666667	66.666667	30.000000
--ART	9.448819	3.797468	0.000000	46.666667	0.000000	10.000000
--MUSIC	22.834646	20.253165	0.000000	20.000000	66.666667	20.000000
--OTHERS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
MATH AND COMPUTER SCIENCE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
NATURAL SCIENCES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
PHYSICAL EDUCATION	14.173228	1.265823	0.000000	0.000000	33.333333	70.000000
SOCIAL AND BEHAVIORAL SCIENCES	4.724409	2.531646	0.000000	20.000000	0.000000	5.000000
SPEECH, DRAMA & COMMUNICATIONS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
OTHER FIELDS	0.787402	0.000000	0.000000	6.666667	0.000000	0.000000

The majors of secondary and K-12 teachers follow the patterns of endorsements at these levels since endorsements are subject specific:

- Physical education is by far the most frequently secondary teaching major, with more than one-fourth of the students majoring in it. Only at the University of Washington did the percentage of students majoring in another field, the social and behavioral sciences, exceed that of physical education majors.
- Only seven secondary teachers majored in an education-related field. Four of these students also had another major in a non-education-related field.

At the secondary level, the relationship between the field of endorsement and students' academic background is of particular interest. Table 25 reports the academic bases for endorsement in five secondary subjects. Excluded from this table are a few individuals for whom reasonably complete transcripts were not available at the time that the data were collected since in those cases it was often difficult to establish with certainty the majors completed.

- Nearly three-fourths of the endorsements granted in these fields were based on the completion of a relevant major.
- In all but three cases, the endorsement was based on the completion of a relevant major or minor. Those three cases, moreover, may be the result of errors in data collection or in the recording of majors or minors on transcripts.
- The patterns vary somewhat among subjects and considerably among institutions. Only about half of the endorsements at Eastern and Washington State were based on relevant majors. About one-fourth of

Table 25

ACADEMIC BASES FOR SECONDARY SCHOOL SUBJECT ENDORSEMENT IN FIVE FIELDS

Institution		Percentage of Endorsed Certificate Earners					
		Biology	English/ Lang. Arts	History/ Govt.	Mathematics	Social Studies	All Five Subjects
Central	-- Relevant major	100%	88%	--	100%	100%	97%
	Relevant minor	0%	13%	--	0%	0%	3%
	No major or minor	0%	0%	--	0%	0%	0%
Eastern	-- Relevant major	26%	75%	--	70%	46%	51%
	Relevant minor	74%	25%	--	30%	49%	47%
	No major or minor	0%	0%	--	0%	5%	2%
U. of Washington	-- Relevant major	100%	88%	87%	55%	95%	86%
	Relevant minor	0%	12%	13%	45%	5%	14%
	No major or minor	0%	0%	0%	0%	0%	0%
Washington State	-- Relevant major	63%	50%	--	63%	48%	53%
	Relevant minor	38%	44%	--	38%	52%	45%
	No major or minor	0%	6%	--	0%	0%	1%
Western	-- Relevant major	100%	92%	92%	100%	95%	94%
	Relevant minor	0%	8%	8%	0%	5%	6%
	No major or minor	0%	0%	0%	0%	0%	0%
All Institutions	-- Relevant major	64%	79%	89%	73%	68%	73%
	Relevant minor	36%	20%	11%	27%	30%	26%
	No major or minor	0%	1%	0%	0%	2%	1%

the biology endorsements at Eastern and less than one-half of the social studies endorsements at both Eastern and Washington State were based on a relevant major.

Grade point average in the major. Table 26 reports the average and the distribution of students' grade point averages in their majors. At two institutions, this average was already calculated and recorded for each student. At the other three, the average was calculated for the courses listed in each individual student's records as fulfilling the requirements for the major. Thus this average does not necessarily include all courses taken in the student's major department but only those required to meet the specific requirements for the major. In the few cases of students with double majors, the major gpa selected was that for a major in biology, English, history, mathematics, or social studies or for the most recently completed major.

Because data on the major gpa for all of each institution's graduates are not available and because grading practices and students may vary among institutions and among departments in a single institution, it is difficult to interpret these data in any precise and meaningful way. It is especially difficult to make comparisons among institutions on the basis of these data. The average cumulative gpa for all graduates is a rough indicator of differences among the institutions' grading practices, and Table 27 reports the major gpa's as a percentage of these all-graduate cumultive gpa's. These percentages may allow some rough comparisons among institutions.

Table 26: ANALYSIS OF GPA IN MAJOR BY LEVEL

		GPA IN MAJOR			TOTAL # OF STUDENTS	NUMBER OF STUDENTS IN EACH GPA GROUP							
						2.00/ 2.25	2.26/ 2.50	2.51/ 2.75	2.76/ 3.00	3.01/ 3.25	3.26/ 3.50	3.51/ 3.75	3.76/ 4.00
		AVG	LOW	HIGH	COUNT	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL	% OF TOTAL
	ENDORSEMENT LEVEL												
ALL INSTITUTIONS	ALL STUDENTS	3.22	2.00	4.00	1540	1.49	4.09	9.16	15.00	20.91	22.08	17.34	9.94
	ELEMENTARY	3.28	2.02	4.00	827	0.73	2.90	7.98	13.54	19.83	22.97	20.19	11.85
	SECONDARY	3.15	2.00	4.00	653	2.60	5.82	10.57	16.69	21.59	20.98	14.24	7.50
	K-12	3.33	2.25	4.00	127	0.79	2.36	7.09	13.39	18.90	20.47	18.90	18.11
INSTITUTION	ENDORSEMENT LEVEL												
CWU	ALL STUDENTS	3.21	2.08	4.00	363	0.83	6.34	11.29	16.25	17.91	15.93	17.91	13.50
	ELEMENTARY	3.31	2.08	4.00	212	0.94	3.77	8.02	13.68	16.98	14.62	24.53	17.45
	SECONDARY	3.05	2.25	4.00	124	0.81	11.29	16.13	19.35	17.74	18.55	9.68	6.45
	K-12	3.35	2.25	4.00	79	1.27	2.53	8.86	12.66	15.19	16.46	18.99	24.05
EWU	ALL STUDENTS	3.23	2.07	3.98	324	1.85	2.47	8.33	12.65	22.84	25.31	18.52	8.02
	ELEMENTARY	3.28	2.07	3.98	170	0.59	2.35	9.41	10.00	17.06	31.18	20.00	9.41
	SECONDARY	3.18	2.14	3.97	154	3.25	2.60	7.14	15.58	29.22	18.83	16.88	6.49
	K-12	3.29	2.47	3.96	4		25.00				50.00		25.00
UW	ALL STUDENTS	3.22	2.32	3.91	248		4.44	7.66	14.11	26.21	24.60	14.11	8.87
	ELEMENTARY	3.21	2.36	3.91	139		4.32	8.63	17.99	23.74	21.58	13.67	10.07
	SECONDARY	3.22	2.32	3.87	98		5.10	7.14	9.18	28.57	27.55	15.31	7.14
	K-12	3.34	2.81	3.86	15				13.33	26.67	33.33	13.33	13.33
WSU	ALL STUDENTS	3.13	2.00	4.00	255	4.71	6.67	14.12	15.69	15.69	18.04	13.33	11.76
	ELEMENTARY	3.21	2.02	4.00	135	1.48	4.44	11.11	14.81	20.00	21.48	14.07	12.59
	SECONDARY	3.03	2.00	4.00	117	8.55	9.40	16.24	17.95	11.97	13.68	11.11	11.11
	K-12	3.29	2.55	3.62	9			22.22		11.11	22.22	44.44	
WWU	ALL STUDENTS	3.28	2.16	4.00	350	0.57	1.14	5.14	16.00	22.29	26.57	20.86	7.43
	ELEMENTARY	3.33	2.16	4.00	171	0.58		3.51	12.28	22.81	27.49	25.15	8.19
	SECONDARY	3.22	2.23	4.00	160	0.62	2.50	7.50	19.37	20.00	26.25	16.87	6.87
	K-12	3.25	2.78	3.94	20				25.00	35.00	20.00	15.00	5.00

From these tables, a few general observations may be made:

- The major gpa for elementary teachers is higher than that for secondary teachers. At least part of the elementary students' higher cumulative gpa may be accounted for by their higher grades in the major, which in a large majority of the cases is in an education-related field. At the one institution in which a small percentage of elementary teachers major in education-related fields, the University of Washington, there is almost no difference in the major gpa's of elementary and secondary teachers.

Table 27

MAJOR GPA'S OF CERTIFICATE EARNERS AS A PERCENTAGE OF THE ALL-GRADUATE CUMULATIVE GPA AT EACH INSTITUTION

	All Students	Elementary	Secondary	K-12
CWU	108%	112%	103%	113%
EWU	105%	107%	103%	107%
UW	106%	105%	106%	110%
WSU	109%	112%	106%	115%
WWU	109%	111%	107%	108%

- The average major gpa of certificate earners at each institution exceeds the average cumulative gpa for all that institution's graduates by from five to nine percentage points.
- The differences among institutions on this comparison are so small that there appears to be little disparity in the institutions' ability to attract students who are strong in their majors into teaching.
- Over 85 percent of the certificate earners had major gpa's above 2.75. Over 27 percent had major gpa's above 3.5.

- Twenty-three certificate earners (1.5%) had major gpa's of 2.25 or below. Twelve of these students were from Washington State, but only the University of Washington had no students in this category.

Course work completed. The transcripts of a sample of elementary teachers and of secondary teachers of biology, English, history/government, mathematics, and social studies were analyzed. The results of this analysis are reported in Table 28 and in more detail in Tables E-4 through E-10 in the Appendix. Several things should be borne in mind in interpreting these data:

1. The data for elementary teachers are based on a random sample and are, therefore, estimates of the averages of the total group. Calculations of the standard errors suggest that the totals should be within ± 4 quarter hours of the actual averages and that the subject area averages should be within ± 2 quarter hours of actual averages.
2. Complete transcripts were not available on a few of the students in the group to be analyzed. In eight cases, the transcripts were so incomplete that the students were eliminated from the sample; four elementary teachers, two biology teachers, one English teacher, and one mathematics teacher were eliminated for this reason. In cases in which transcripts were nearly complete and in which the amount of undocumented course work was known, that course work has been categorized as "unclassified" in the tables.
3. The course work of students was classified into ten different categories according to the departments in which it was offered:

Biology -- biology, botany, environmental science, zoology, and other life science departments.

Table 28

AVERAGE QUARTER HOURS OF COURSE WORK TAKEN BY ELEMENTARY AND FIVE TYPES OF SECONDARY TEACHERS AT FIVE PUBLIC UNIVERSITIES, 1982-83

	Elementary	Secondary Biology	Secondary English	Secondary History/Govt.	Secondary Math	Secondary Soc. Studies
Total	219	251	236	239	238	236
Total Non-education	123	192	178	185	177	177
Total Education	96	58	58	55	60	58
Unclassified	1	1	0	0	1	0
Biology	7	53	9	6	12	8
Other Sciences	8	32	9	10	29	8
Foreign Language/Comm.	15	11	24	22	11	16
Education Departments	78	46	47	49	46	46
English	15	15	62	19	11	17
Other Humanities	17	15	17	13	13	12
History	9	7	15	56	5	35
Other Social Sciences	38	26	32	47	27	50
Mathematics	11	14	6	5	59	6
Other Fields	21	31	14	12	24	37
Number of Students	154	56	87	28	41	122

Other Science -- astronomy, chemistry, engineering, geology, physics, and other chemical and physical science departments.

Foreign Language and Communication -- foreign language, linguistics, drama, journalism, speech and other communications departments.

Education Departments -- education, business education, early childhood education, special education, and other education-related departments.

English -- English departments only.

Other Humanities -- art, comparative literature, liberal studies, music, philosophy, religion, and other humanities departments.

History -- history departments only.

Other Social Science -- anthropology, area studies, economics, ethnic studies, geography, political science, psychology, sociology, and women's studies departments.

Mathematics -- mathematics, computer science, quantitative methods, and statistics departments.

Other Fields -- agriculture, health, home economics, industrial and technical, physical education, and other unclassified departments.

4. Within all of the categories except Education, course work was classified as education-related or non-education-related. Courses described as being for teachers or about education and all courses taught in education departments were classified as education-related. The row labelled Total Education on Tables 28 and E-4 through E-10 reflects the sum of the education-related course work in all department categories.

5. The lows reported in Tables E-4 through E-10 should be interpreted with caution. Some course work is unclassified because transcripts were unavailable. That unclassified course work may include courses that might raise the reported lows. In addition, that some students took no biology and some took no other science does not mean that any student took no college-level science at all. All institutions require some science for graduation, but that science course work may not include biology or may consist entirely of biology.

6. Students receiving the Provisional Certificate were not specifically endorsed as biology teachers but only as teachers of natural science. These individuals were included in the category of biology teachers if, according to the recommending institution's records, their endorsement in natural science was based on completion of a program in biology.

Observations on elementary teachers include:

- Prospective elementary teachers complete on the average the equivalent of 2.6 full-time quarters (39 quarter hours) of college work beyond the minimum graduation requirement of 180 quarter hours. These averages range from 208 quarter hours at Central to 239 at the University of Washington.
- At all universities except the University of Washington, some elementary teachers were able to complete certification and baccalaureate requirements within the 180 quarter hour minimum. The minimum number of quarter hours in which elementary certification was achieved at the University of Washington was 200.

- The composite elementary teacher completes an academic program consisting of:
    - 5.2 full-time quarters in education department courses (plus another full-time quarter of education-related courses taught in other departments)
    - 3.1 full-time quarters in history and social science courses
    - 2.0 full-time quarters in English, communications, and foreign language courses
    - 1.7 full-time quarters in science and mathematics courses
    - 1.4 full-time quarters in courses in other fields
    - 1.1 full-time quarters in art, music, and other humanities courses
- Despite these averages, it seems to be possible for some students to become certified without course work in one or more of the ten department categories except Education and Other Social Science. This practice varies by institution, however. Only the University of Washington certified students without college-level English. Only Central and the University of Washington certified students without college-level mathematics. And only Eastern and the University of Washington certified students without college-level art, music, or other humanities courses. Once again, however, these apparent results should be interpreted cautiously since some students' transcripts were incomplete.

Observations on *secondary* teachers include:

- Biology teachers complete on average the equivalent of 4.7 full-time quarters (71 quarter hours) beyond the minimum 180-quarter-hour requirement for graduation, ranging from an average of 240 quarter hours at Eastern to 269 quarter hours at Western.

- The other four types of teachers completed on average over 3.5 full-time quarters beyond the minimum for graduation, ranging from an average of 216 quarter hours for mathematics teachers at Washington State to an average of 270 quarter hours for mathematics teachers at the University of Washington.
- Some students in all categories but biology were able to complete degree and certification requirements within the minimum graduation requirements. The minimum in biology was 194 quarter hours. At the University of Washington, the minimum number of quarter hours taken by teachers of biology (258 q.h.) and mathematics (225 q.h.) were considerably higher than minimums at other institutions.
- Composite profiles of the academic backgrounds of secondary teachers:

Biology teachers:

3.5 full-time quarters of biology

3.1 full-time quarters of other science and mathematics

3.1 full-time quarters of education department courses (plus .8 quarter of education-related courses taught in other departments)

2.7 full-time quarters of English, foreign language, communications, and humanities

2.2 full-time quarters of history and social science

2.1 full-time quarters of courses in other fields

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English teachers:

4.1 full-time quarters of English

3.1 full-time quarters of education department courses (plus .7 quarter of education-related courses in other departments)

3.1 full-time quarters of history and social science

2.7 full-time quarters of foreign language, communications, and humanities

1.6 full-time quarters of science and mathematics

.9 full-time quarter of courses in other fields

History/Government teachers:

3.7 full-time quarters of history

3.6 full-time quarters of English, foreign language, communications, and humanities

3.3 full-time quarters of education department courses (plus .4 quarter of education-related courses in other departments)

3.1 full-time quarters of other social sciences

1.4 full-time quarters of science and mathematics

.8 full-time quarter of courses in other fields

Mathematics teachers:

3.9 full-time quarters of mathematics

3.1 full-time quarters of education department courses (plus .9 quarter of education-related courses in other departments)

2.7 full-time quarters of science

2.3 full-time quarters of English, foreign language, communications, and humanities

2.1 full-time quarters of history and social science

1.6 full-time quarters of courses in other fields

Social studies teachers:

3.3 full-time quarters of social science

3.1 full-time quarters of education department courses (plus .8 quarter of education-related courses in other departments)

3.0 full-time quarters of English, foreign language, communication, and humanities

2.5 full-time quarters of courses in other fields

2.3 full-time quarters of history

1.5 full-time quarters of science and mathematics

- The average amount of course work in the field of endorsement sometimes varies considerably from institution to institution. Biology teachers at Eastern averaged 38 quarter hours of biology; those at Central and Western averged 69 quarter hours. English teachers at Washington State averaged 50 quarter hours of English; those at the University of Washington averaged 74 quarter hours. Social studies teachers at Eastern and Washington State averaged 68 quarter hours of history and social science; those at Western averaged 111 quarter hours. These differences parallel differences in the academic bases of endorsements analyzed in Table 25.
- Eastern consistently had the lowest minimum amount of course work in the field of endorsement--19 hours in biology, nine hours in English (this individual, however, had a speech major which, under the rules for provisional certificates, is endorsed as English/Language Arts), 15 hours in mathematics, and for social studies teachers no history and eight hours of social science (these are minimums for different individuals).

- As with elementary teachers, it appears to be possible for some secondary teachers to become certified without any course work in one or more of the ten categories except for education, social science, and the field of endorsement. Here, too, there is some variation among institutions. For example, secondary teachers at all institutions except Washington State took courses in the English department.

E. Employment

Each year the placement offices of the state's teacher preparation institutions collect data on the employment status of students who earned certificates during the previous year. These data are submitted to OSPI and have been included in this study. Table 29 summarizes these data for certificate earners at the state universities in 1982-83.

Employment status is classified into 11 different catgegories. Many of these categories are self-expanatory, but four require additional comment:

Substituting -- A few teachers indicated that they had long-term substitute positions for regular teachers on leave, but most were substituting on call while seeking more permanent employment.

Non-certified education-related -- This category includes teachers working for school districts in secretarial, custodial, and teacher aide positions as well as some individuals teaching in pre-schools.

Unemployed seeking education-related employment/Unemployed seeking non-education employment -- Many teachers placed themselves in both categories, but because only one classification could be coded, they were classified as seeking education employment only.

Table 29: EMPLOYMENT STATUS OF 1982-83 CERTIFICATE COMPLETERS AS OF FALL, 1983

	INSTITUTION																							
	ALL INSTITUTIONS				CWU				EWU				UW				WSU				WWU			
	LEVEL				LEVEL				LEVEL				LEVEL				LEVEL				LEVEL			
	ALL	ELEM	SECN	K-12	ALL	ELEM	SECN	K-12	ALL	ELEM	SECN	K-12	ALL	ELEM	SECN	K-12	ALL	ELEM	SECN	K-12	ALL	ELEM	SECN	K-12
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
TOTAL NO. OF STDNTS	1540	827	653	127	363	212	124	79	324	170	154	4	248	139	98	15	255	135	117	9	350	171	160	20
TEACHING IN-STATE	31.8	32.5	29.9	45.7	32.5	35.4	27.4	50.6	32.4	32.9	31.8	50.0	35.5	37.4	32.7	26.7	28.6	31.1	25.6	11.1	30.0	25.7	31.3	55.0
TEACHING OUT/STATE	5.4	5.3	5.2	11.0	4.1	4.2	3.2	7.6	6.5	6.5	6.5	50.0	6.5	6.5	6.1	20.0	6.3	6.7	4.3	33.3	4.3	3.5	5.6	0.0
SUBSTI-TUTING	22.8	25.8	20.4	13.4	23.1	26.4	18.5	16.5	29.3	33.5	24.7	0.0	21.0	20.9	21.4	20.0	18.4	21.5	17.1	11.1	20.9	24.6	19.4	0.0
NON-CERT. EDUC-REL.	3.2	4.1	2.0	2.4	5.2	6.6	3.2	1.3	2.2	1.8	2.6	0.0	1.6	2.9	0.0	6.7	1.6	2.2	0.9	0.0	4.3	5.8	2.5	5.0
NON-EDUC. POSITION	13.4	10.3	17.8	4.7	11.0	6.6	19.4	3.8	15.1	9.4	21.4	0.0	17.7	18.0	18.4	6.7	11.4	8.1	15.4	0.0	12.6	11.1	14.4	10.0
UNEMP-NOT SEEKING	1.4	2.1	0.6	0.8	0.8	0.9	0.0	1.3	3.4	5.3	1.3	0.0	1.6	1.4	2.0	0.0	0.8	1.5	0.0	0.0	0.6	1.2	0.0	0.0
U-SEEKING EDUC-REL.	4.9	5.2	4.0	4.7	2.2	0.5	4.8	1.3	2.2	3.5	0.6	0.0	2.0	2.2	1.0	6.7	5.1	6.7	3.4	0.0	12.0	14.0	8.7	20.0
U-SEEKING NON-EDUC.	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.5	0.0	0.0	0.3	0.6	0.0	0.0
ATTENDING GRAD SCHL	2.7	1.6	4.0	1.6	2.8	1.9	4.0	1.3	3.4	1.8	5.2	0.0	3.2	2.2	4.1	6.7	2.7	1.5	4.3	0.0	1.4	0.6	2.5	0.0
OTHER	0.6	0.4	0.9	0.8	0.3	0.0	0.8	0.0	0.0	0.0	0.0	0.0	1.2	0.7	1.0	6.7	0.8	0.7	0.9	0.0	1.1	0.6	1.9	0.0
UNKNOWN	13.7	12.5	15.3	15.0	17.9	17.5	18.5	16.5	5.6	5.3	5.8	0.0	9.7	7.9	13.3	0.0	23.5	18.5	28.2	44.4	12.6	12.3	13.7	10.0

Unknown -- These are teachers who did not respond to the universities' mail and telephone inquiries.

In interpreting these data, it should be remembered that this information was collected in the fall of 1983. The employment status of many of these individuals may have changed subsequently.

In judging the success of an institution's graduates, there is considerable debate over the way in which the institution's placement percentage should be calculated. Many suggest that those whose employment status is unknown should be excluded. Others argue that teaching and substituting and perhaps even non-certified education employment should be counted as successful placements. Some believe that students not seeking employment, attending graduate school, or seeking non-education employment should be excluded from the calculation since they are not available for teaching positions. Table 30 reports placement percentages calculated in a variety of ways that reflect these differences of opinion.

Observations on these data include:

- Fewer than half of the certificate earners were able to secure employment as regular classroom teachers. Considerably more, however, perhaps as many as three-fourths, were making some contribution to the state's K-12 educational system through teaching, substituting or other work in the schools.
- The placement rates of elementary and secondary teachers were about the same even though 27 percent more individuals had prepared as elementary teachers. These figures suggest that there is more demand for elementary than for secondary teachers and that the teacher preparation system has adjusted itself to this difference.

Table 30

PLACEMENT PERCENTAGES FOR FIVE PUBLIC UNIVERSITIES
1982-83

	All	CWU	EWU	UW	WSU	WWU
As a percentage of all students prepared						
Teaching only	37%	37%	39%	42%	35%	34%
Teaching and substituting	60%	60%	68%	63%	53%	55%
Teaching, substituting, and non-certificated	63%	65%	70%	65%	55%	59%
As a percentage of those with known employment status						
Teaching only	43%	45%	41%	46%	46%	39%
Teaching and substituting	69%	73%	72%	70%	70%	63%
Teaching, substituting, and non-certificated	73%	79%	75%	71%	72%	68%
As a percentage of those known and available for education employment						
Teaching only	45%	47%	44%	49%	48%	40%
Teaching and substituting	73%	76%	78%	74%	74%	65%
Teaching, substituting, and non-certificated	77%	83%	80%	75%	76%	70%

- The placement rate for K-12 teachers was considerably higher. As we have already noted, 56 percent of K-12 teachers were endorsed in special education and 24 percent were endorsed in music.
- Almost twice as high a percentage of secondary teachers had taken a position outside education or had gone to graduate school than had elementary teachers. This may be the result of the lower demand for secondary teachers and the fact that the preparation of secondary teachers is less education-specific than that of elementary teachers. In this connection, it should be noted that at the University of Washington, where very few elementary teachers major in education-related fields, the percentages of elementary and secondary students accepting non-education employment are about equal.
- The percentage of University of Washington students who took jobs outside of education is considerably higher than that at any other institution. This difference is almost entirely accounted for by elementary teachers.
- Though there are some differences in placement rates at the various institutions, these are small enough to suggest that the career prospects of a student preparing to be a teacher at one state institution are not significantly better or worse than those of his or her peers at other institutions.

Employment of secondary teachers by field of endorsement. Table 31 reports the employment status of secondary teachers by the fields in which they are endorsed. Teachers endorsed in two or three categories are counted in each. Because the specific teaching assignments of employed teachers are not known, these data provide only an approximate indicator of the

Table 31: EMPLOYMENT STATUS OF SECONDARY CERTIFICATE EARNERS BY SUBJECT

	ALL CERTIFICATE COMPLETERS	EMPLOYMENT STATUS							
		TEACHING	SUB-STITUTING	NON-CERT. EDUC. POS.	NON-EDUC. POSITION	UNEMPLOYED	ATTENDING GRAD SCHOOL	OTHER	UNKNOWN
	COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT	PERCENT OF COUNT
SUBJECT OF ENDORSEMENT									
AGRICULTURE	17	47.06	11.76		11.76		11.76		17.65
ART	24	16.67	37.50		16.67	12.50	8.33		8.33
BUSINESS	41	46.34	12.20	2.44	24.39	2.44	2.44	2.44	7.32
DISTRIB. EDUCATION	6	50.00	16.67		16.67				16.67
ENGLISH	88	37.50	22.73	2.27	13.64	2.27	5.68	1.14	14.77
FOREIGN LANGUAGES	36	33.33	19.44	2.78	11.11	11.11	8.33		13.89
HEALTH EDUCATION	39	15.38	33.33	5.13	28.21		2.56		15.38
HOME ECONOMICS	38	23.68	21.05		15.79	10.53			28.95
INDUSTRIAL ARTS	43	41.86	16.28		20.93	6.98	6.98	4.65	2.33
MATHEMATICS	42	71.43	2.38		9.52	2.38		2.38	11.90
MUSIC	23	65.22	8.70		17.39				8.70
NATURAL SCIENCES	85	49.41	11.76	1.18	17.65	1.18	3.53		15.29
OTHER EDUC.-RELATED	6	50.00			33.33	16.67			
PHYSICAL EDUCATION	192	21.88	27.60	4.17	19.79	4.69	4.17	1.04	16.67
SOCIAL SCIENCES	136	31.62	22.06	1.47	19.85	3.68	4.41	0.74	16.18
SPECIAL EDUCATION	8	75.00							25.00
SPEECH / DRAMA	8	25.00	37.50		12.50				25.00
TRAFFIC SAFETY	18	22.22	27.78	5.56	38.89				5.56

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employment opportunities in the various subjects. Table 32 presents these placement data calculated as percentages of these with known employment status.

Observations on these data include:

- Placement rates into teaching vary considerably by subject from two-thirds or more of those prepared in special education, mathematics, and music to less than one-fourth of those prepared in physical education, health, art, and traffic safety.
- Even in fields with low placement rates into teaching, the percentages of individuals making a contribution to the state's educational system through teaching, substituting, or non-certified education employment remains high, around 60 percent.
- There is little evidence that industrial demand for mathematics and science graduates is drawing prepared teachers in those fields away from teaching, at least in the year after they become certified.

Academic achievement and employment. Tables 33 and 34 present some evidence of the academic qualifications of those certificate earners who are able to secure teaching positions. Observations on these data include:

- High college grades overall and in the major appear to confer some marginal advantage in the teaching market, especially for elementary and secondary teachers.
- Nevertheless, some certificate earners who graduate in the bottom fifth of their college class still succeed in finding teaching positions, though at a rate somewhat lower than their proportion of all certificate earners.
- A large majority of the students who graduated in the top fifth of their class remained in education, 50 percent in regular teaching

Table 32

SECONDARY TEACHING PLACEMENTS AS A PERCENTAGE OF THOSE WITH KNOWN EMPLOYMENT STATUS, BY SUBJECT

	Teaching Only	Teaching and Substituting	Teaching, Subbing, and Non-Certificate
Agriculture	57%	71%	71%
Art	17%	59%	59%
Business	50%	63%	66%
Distributive Ed.	60%	80%	80%
English	44%	71%	73%
Foreign Language	39%	61%	65%
Health Education	18%	58%	64%
Home Economics	33%	63%	63%
Industrial Arts	43%	60%	60%
Mathematics	81%	84%	84%
Music	71%	81%	81%
Natural Sciences	58%	72%	74%
Other Ed.-Related	50%	50%	50%
Physical Education	26%	59%	64%
Social Sciences	38%	64%	66%
Special Education	100%	100%	100%
Speech/Drama	33%	83%	83%
Traffic Safety	24%	53%	59%

Table 33: GPA'S OF CERTIFICATE COMPLETERS BY EMPLOYMENT STATUS

			ALL CERTIFICATE COMPLETERS	EMPLOYMENT STATUS						
				TEACHING	SUB-STITUTING	NON-CERT. EDUC. POS.	NON-EDUC. POSITION	UNEMPLOYED	ATTENDING GRAD SCHOOL	OTHER / UNKNOWN
TOTAL C-EARNERS	COUNT		1540	572	351	49	206	100	41	221
CUMULATIVE GPA	ALL	AVERAGE	3.12	3.17	3.10	3.07	3.08	3.10	3.20	3.07
¤	ELEM	AVERAGE	3.16	3.23	3.13	3.10	3.12	3.18	3.09	3.06
¤	SECN	AVERAGE	3.07	3.11	3.02	2.93	3.05	2.98	3.24	3.07
¤	K-12	AVERAGE	3.18	3.18	3.19	3.37	3.12	2.94	3.30	3.21
GPA IN MAJOR	ALL	AVERAGE	3.22	3.26	3.18	3.26	3.16	3.26	3.27	3.18
¤	ELEM	AVERAGE	3.28	3.35	3.21	3.29	3.22	3.35	3.17	3.19
¤	SECN	AVERAGE	3.15	3.16	3.11	3.15	3.12	3.11	3.30	3.16
¤	K-12	AVERAGE	3.33	3.37	3.31	3.55	3.12	3.15	3.40	3.27

Table 34: GPA'S OF CERTIFICATE COMPLETERS BY EMPLOYMENT STATUS

		EMPLOYMENT STATUS							
		ALL CERTIFICATE COMPLETERS	TEACHING	SUB-STITUTING	NON-CERT. EDUC. POS.	NON-EDUC. POSITION	UNEMPLOYED	ATTENDING GRAD SCHOOL	OTHER / UNKNOWN
TOTAL C-EARNERS	COUNT	1540	572	351	49	206	100	41	221
NO. OF C-EARNERS IN TOP QUINTILE	PERCENT OF COUNT	26.6	30.9	25.4	24.5	20.9	21.0	29.3	24.9
NO. OF C-EARNERS IN LOW QUINTILE	PERCENT OF COUNT	11.3	9.1	13.7	14.3	15.5	9.0	4.9	10.9

jobs, 25 percent substituting, and 3 percent in non-certified education-related positions. By comparison, only 12 percent took non-education jobs, 6 percent were unemployed, and 3 percent attended graduate school.

F. College Admissions Characteristics

The Washington Pre-College Testing (WPCT) Program supplied college admissions data on first teaching certificate earners at all Washington colleges and universities. The University of Washington's Educational Assessment Center graciously provided technical assistance and computer facilities for the compilation of these data.

The decision to seek these data directly from WPCT was made for three reasons. First, WPCT could provide data on the certificate completers from all Washington institutions. Because of time and resource constraints, data collection visits were possible only at the five public universities. Second, because a significant percentage of students at the public universities are transfer students from other institutions, the public universities' records of WPCT scores are to some extent incomplete. Transfer students, especially those with the associate degree from a community college, are often not required to submit admissions test scores because they have already demonstrated their academic ability in college-level courses. In addition, because admissions tests other than the WPCT are permissable, some students may submit scores on the other tests rather than those on the WPCT. Finally, WPCT was able to provide college admissions data in addition to test scores, in particular the students' high school grade point average.

Tables 35, 36, and 37 analyze college admissions data for 973, or 45.5 percent, of the 2,139 individuals who completed teacher preparation programs at Washington institutions in 1982-83 and who were subsequently certified by OSPI. The tables compare certificate earners' high school gpa's, WPCT verbal composite scores, and WPCT quantitative composite scores to these characteristics of two other groups of WPCT test takers, all Washington high school students who took the WPCT in the spring or fall of 1978 and all freshmen with WPCT scores who entered Washington public universities in the fall of 1979. Tables E-11 and E-12 in the appendix include frequency distributions of certificate earners' test scores. Several things should be borne in mind in interpreting these data:

1. The data were compiled by comparing the names and birthdates of certificate earners with those of WPCT test takers in 1977, 1978, and 1979 and the names only with test takers in 1974, 1975, and 1976. WPCT did not collect students' birthdates before 1977.
2. As a result, there may be a few incorrect matches included in the data, especially among the 302 matches with 1974, 1975, and 1976 test takers.
3. In addition, students who married and changed their names after high school but before completing certificate programs will be excluded as will students who took the test before 1974.
4. Because the WPCT is not usually taken by out-of-state students, admissions data for certificate earners who graduated from a high school outside Washington are excluded.
5. Because community colleges do not require WPCT scores for admission, some community college transfers will not have taken the WPCT.

Table 35: COLLEGE ADMISSIONS DATA COMPARISONS -- HIGH SCHOOL GPA

		COMPARISON GROUPS	
		ALL 1978 HIGH SCHOOL TEST-TAKERS	ALL 1979 PUBLIC 4-YEAR FRESHMAN
COMPARISON GROUP GPA	MEAN	3.05	3.27
CERTIFICATE EARNERS GPA	MEAN	3.28	3.28
BREAKDOWN BY PERCENTILE			
BELOW 50TH PERCENTILE	PERCENT OF C-EARNERS	32.8	47.9
AT OR ABOVE 50TH PERCENTILE	PERCENT OF C-EARNERS	67.2	52.1
BREAKDOWN BY QUINTILE			
BOTTOM QUINTILE	PERCENT OF C-EARNERS	7.2	19.0
SECOND QUINTILE	PERCENT OF C-EARNERS	15.3	19.1
THIRD QUINTILE	PERCENT OF C-EARNERS	21.1	20.8
FOURTH QUINTILE	PERCENT OF C-EARNERS	27.1	21.8
TOP QUINTILE	PERCENT OF C-EARNERS	29.3	19.3

Table 36: COLLEGE ADMISSIONS DATA COMPARISONS -- WPCT VERBAL COMPOSITE

		COMPARISON GROUPS	
		ALL 1978 HIGH SCHOOL TEST-TAKERS	ALL 1979 PUBLIC 4-YEAR FRESHMAN
COMPARISON GROUP VC	MEAN	48.4	50.8
CERTIFICATE EARNERS VC	MEAN	49.6	49.6
BREAKDOWN BY PERCENTILE			
BELOW 50TH PERCENTILE	PERCENT OF C-EARNERS	43.8	55.5
AT OR ABOVE 50TH PERCENTILE	PERCENT OF C-EARNERS	56.2	44.5
BREAKDOWN BY QUINTILE			
BOTTOM QUINTILE	PERCENT OF C-EARNERS	10.7	20.1
SECOND QUINTILE	PERCENT OF C-EARNERS	19.8	23.6
THIRD QUINTILE	PERCENT OF C-EARNERS	25.0	18.7
FOURTH QUINTILE	PERCENT OF C-EARNERS	23.0	18.2
TOP QUINTILE	PERCENT OF C-EARNERS	21.5	19.3

Table 37: COLLEGE ADMISSIONS DATA COMPARISONS -- WPCT QUANTITATIVE COMPOSITE

		COMPARISON GROUPS	
		ALL 1978 HIGH SCHOOL TEST-TAKERS	ALL 1979 PUBLIC 4-YEAR FRESHMAN
COMPARISON GROUP QC	MEAN	49.7	53.2
CERTIFICATE EARNERS QC	MEAN	50.3	50.3
BREAKDOWN BY PERCENTILE			
BELOW 50TH PERCENTILE	PERCENT OF C-EARNERS	44.9	60.6
AT OR ABOVE 50TH PERCENTILE	PERCENT OF C-EARNERS	55.1	39.2
BREAKDOWN BY QUINTILE			
BOTTOM QUINTILE	PERCENT OF C-EARNERS	14.9	24.0
SECOND QUINTILE	PERCENT OF C-EARNERS	18.6	25.0
THIRD QUINTILE	PERCENT OF C-EARNERS	24.0	23.6
FOURTH QUINTILE	PERCENT OF C-EARNERS	25.4	17.3
TOP QUINTILE	PERCENT OF C-EARNERS	17.1	10.1

6. Although high school gpa's and WPCT scores are reasonably stable from year to year, it should be noted that in 1978 the average high school gpa for all test takers was slightly lower than in previous years while the average verbal and quantitative test scores were slightly higher.

Observations on these data include:

- The average high school gpa of certificate earners was significantly higher than that for all WPCT test takers, and the average verbal and quantitative composites were somewhat higher.
- The average high school gpa's of certificate earners and entering university freshmen were about the same, but certificate earners' test scores were somewhat lower on average than those for entering freshmen.
- These data and the data on college grade point averages suggest that as a group, those who become teachers are what are often called "over-achievers," that is, students who perform much better in course work than their test scores would lead one to predict. Although the phenomenon of "over-achievement" is not well understood, one might speculate that potential teachers are drawn from that group of students who have, in a sense, mastered school, those who understand and are comfortable with the demands that schools make of students and who have the abilities and self-discipline (something not well measured by admissions tests) to meet those demands.
- The distribution of certificate earners' admissions data suggests that they are about proportionately represented among those with the highest high school gpa's and verbal composite scores.

- By contrast, teaching appears not to attract a proportionate percentage of the highest scorers on the quantitative test. Only 10.1 percent of certificate earners had quantitative composite scores in the top fifth of all entering freshmen; 24 percent had quantitative scores in the bottom fifth of this group.

APPENDICES

Table A-1. Numbers of Approved Teaching Certificate Endorsement Programs by Institution and Level of Endorsement, 1983-84.

	Level		
Institution	K-8	7-12	K-12
Central Washington University	16	25	4
Eastern Washington University	26	26	0
University of Washington	32	31	2
Washington State University	17	27	0
Western Washington University	13	24	1
Gonzaga University	2	24	0
Heritage College	5	2	0
Northwest College	1	0	0
Pacific Lutheran University	18	21	3
St. Martin's College	11	9	0
Seattle Pacific University	24	24	3
Seattle University	16	15	1
University of Puget Sound	27	25	4
Walla Walla College	3	23	1
Whitman College	14	16	1
Whitworth College	24	23	0
Totals	249	315	20

Grand Total: 584

Table A-2. Numbers of Approved Teaching Certificate Endorsement Programs by Field and Level of Endorsement, 1983-84.

	K-8		7-12		K-12	
Fields	Primary End.	Supporting[a] Only	Primary[b] End.	Supporting Only	Primary End.	Supporting Only
Agriculture	--	--	1	1	--	--
Art	0	11	13	--	2	--
Behavioral Studies	--	7	9	2	--	--
Bilingual Education	--	4	1	--	--	--
Biological Sciences	--	10	14	--	--	1
Business Office Education	--	1	5	--	--	--
Business Office Education (Voc.)	--	1	4	--	--	--
Chemistry	--	9	14	--	--	--
Chinese	--	1	--	2	--	--
Distributive Education (Voc.)	--	--	2	--	--	--
Early Childhood	--	5	--	--	--	--
Earth Science	--	6	9	1	--	--
Economics/Geography	--	6	9	--	--	--
Elementary Education	16	--	--	--	--	--
English Second Language	--	2	1	1	--	--
English/Language Arts	--	13	15	--	--	--
French	--	1	13	--	--	--
General Science	--	9	10	--	--	--
German	--	9	13	--	--	--
Greek	--	1	2	--	--	--
Health Education	--	5	8	1	--	--
History/Government	--	10	15	--	--	--

Table A-2 (cont.). Numbers of Approved Teaching Certificate Endorsement Programs by Field and level of Endorsement, 1983-84.

	K-8		7-12		K-12	
Fields	Primary End.	Supporting[a] Only	Primary[b] End.	Supporting Only	Primary End.	Supporting Only
Home Economics	--	1	2	--	--	--
Home Economics (Voc.)	--	1	5	--	--	--
Industrial Arts	--	--	1	--	--	--
Industrial Arts (Voc.)	--	--	3	--	--	--
Intercultural Studies	--	1	4	1	--	--
Italian	--	--	--	1	--	--
Japanese	--	1	--	2	--	--
Journalism	--	2	5	1	--	--
Latin	--	1	3	1	--	--
Learning Resources	--	4	1	3	--	2
Mathematics	--	12	14	--	--	--
Music	1	10	12	--	6	--
Philosophy	--	1	3	--	--	--
Physical Education	--	10	12	1	3	--
Physics	--	7	12	--	--	--
Reading	--	6	2	2	1	1
Religious Studies	--	4	4	2	--	1
Russian	--	4	5	--	--	--
Social Studies	--	10	11	--	--	--
Spanish	--	8	12	--	--	--
Special Education	12	1	10	1	1	1
Speech/Drama	--	10	9	2	--	--
Traffic Safety	--	--	--	2	--	--

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[a] These endorsements are granted only to individuals with primary endorsements in other fields. At the K-8 level, they reflect the required areas of academic emphasis and must be accompanied by a primary endorsement in elementary education.

[b] Many secondary programs permit both primary and supporting endorsement in the indicated fields.

Appendix B

REQUIREMENTS FOR TEACHER EDUCATION

College/University	Admissions Requirements		Retention Requirements	Exit Requirements
	College Achievement and Other	Basic Skills		
Central Washington University	1. 2.5 gpa in all general education courses. (In fall 1985, cum. gpa at or above all-campus average gpa.) 2. Successful completion of English 101 and 201. 3. Test of Handwriting (legibility).	Comprehensive Test of Basic Skills, Form U (McGraw/Hill): (a)English usage raw score of 50. (b)Spelling-raw score of 20. (c)Reading-raw score of 28. (d)Math (computation)-raw score of 39.	1. Must maintain a cumulative gpa of 2.5. 2. Must maintain a 2.5 in major and minor academic areas.	2.5 cumulative, major, and minor gpa.
Eastern Washington University	1. Must earn 2.5 in Education 201, Introduction to Education; Applied Psychology 302, Educational Psychology; and a course in multicultural education and sex equity. 2. Cumulative gpa 2.5; 2.5 gpa in major/minor courses completed.	1. Math dept. test (70 percentile). 2. Speech & Hearing dept. test (70 percentile). 3. English composition (a)combination of superior performance on Washington Pre-College Test and superior writing performance in diagnostic essays by English dept or (b)a grade of 2.0 or better in one or more composition classes.	1. Completion of at least two-thirds of major with minimum gpa of 2.5. 2. Minimum 2.5 gpa with no individual course grade below 2.0 in specified education courses. 3. Successful interview with Professional Candidacy Committee. 4. Two letters of recommendation from college faculty members.	1. Completion of all professional education courses and major/minor requirements with a minimum gpa of 2.5 and no grade below 2.0. 2. Successful completion of student teaching. 3. Exit evaluation of candidate's portfolio for evidence of attainment of generic competencies and possession of characteristics which facilitate positive teacher-pupil relations.

	Admissions Requirements			
College/University	College Achievement and Other	Basic Skills	Retention Requirements	Exit Requirements
Gonzaga University	Admission to Phase I: 1. "Good Standing" in Univ. 2. Must be making appropriate progress toward a degree with an acceptable major. Admission to Phase II: 1. Satisfaction of basic skills requirements (see next column). 2. Satisfactory evaluation of Phase I in-school experience. 3. Acceptable level of performance on all generic standards as evaluated in EDTE 100.	Score of 80 percent on each subtest of college-developed tests in English and mathematics.	Admission to Phase III: 1. Completion of major with 3.0 gpa. 2. Cumulative gpa of 2.5. 3. Cumulative gpa of 3.0 in professional ed. courses. 4. Two positive evaluations from major field instructors. 5. Positive evaluation by education faculty. 6. Acceptable philosophy of education and learning theory statement.	1. Completion of bachelor's degree. 2. Successful completion of all professional courses. 3. Successful completion of student teaching. 4. Unanimous recommendation of review board comprising a representative of the college, a school district, and a professional association.
Heritage College	1. Cumulative gpa of 2.3. 2. Completion of General Education requirements with gpa of 2.0. 3. Completion of Ed. 205, Intro. to Ed., which includes: (a)Self-selection criteria (b)education as a career (c)personality inventory (d)30 clock hours in field with successful experience. 4. Recommendation by two teachers.	1. College designed examination in oral communication. 2. College designed examination in writing. 3. California Achievement Test (mathematics).		

REQUIREMENTS FOR TEACHER EDUCATION

	Admissions Requirements			
College/University	College Achievement and Other	Basic Skills	Retention Requirements	Exit Requirements
Northwest College	1. 2.67 gpa in introductory education and psychology courses. 2. Pass screening interview. 3. 2.67 cum. gpa.	1. 2.67 gpa with no grade below 2.0 in introductory English, speech, and math courses. 2. Pass math, speech, and writing competency tests. 3. Recommendation from communications professor.	1. 2.67 cumulative gpa. 2. 2.67 gpa in prof. ed. sequence. 3. Successful completion of field and course requirements.	1. Completion of all degree requirements. 2. Exit interview with department chairman.
Pacific Lutheran University	1. GPA of 2.5. 2. Two recommendations from business, professional or academic persons. 3. Completion of Minnesota Teacher Attitude Inventory. 4. Autobiography of 500 words.	1. College Board Test of Standard Written English (50 percentile). 2. College Board Test of Written English Expression Placement Test (50 percentile). 3. College Board Math Test (50 percentile).	Positive recommendation from field experience teacher.	1. 2.5 cumulative gpa. 2. No grade in major or minor courses below C-. 3. No grade in ed. courses below C-.
Saint Martin's College	1. Verification of specified competencies and a grade of at least "C" in the following introductory courses; ENG 101 and 102; EDUC 201, 202, and 203; PSYCH 101; SPH 106; and MATH 211. 2. 2.5 cum. gpa.	1. Grade of "C" or better in Math 211 and verification of specified competencies. 2. Grade of "C" or better in SPH 106 and verification from instructor of satisfactory competency. 3. Grade of "C" or better in ENG 101 and 102 and verification of specified, basic competencies. 4. Placement at or above the 50th percentile on the College Board Test of Standard Written English.	1. Maintain an overall 2.5 gpa. 2. Receive a "C" or better in all professional Education courses. 3. Receive a "P" (Pass) in student teaching.	

	Admissions Requirements			
College/University	College Achievement and Other	Basic Skills	Retention Requirements	Exit Requirements
Seattle Pacific University	2.7 cum. gpa or 3.0 on last 45 qh credits of college work.	1. Composition: McGraw Hill Basic Spelling and Writing Exams (stanine of six or better) OR Descriptive Test of Language Skills of the College Board (20 out of 25 scale score). 2. Computation: Math Test designed by Math Dept. 3. Spelling: McGraw Hill Basic Spelling Exam (stanine of six or better). 4. If scores fall below acceptable levels, satisfactory completion of English, math, and/or spelling lab(s).	1. Satisfactory completion of "Phase 1" block of 3 Ed. courses. 2. Recommendation of Phase 1 faculty team. 3. 2.7 cum. gpa. 4. Recommendation by major advisor. 5. Satisfactory progress in major.	1. Complete degree, major, minor, and education requirements. 2. Earn 2.0 in each education methods course. 3. Earn 3.0 in Phase 2 internships.
Seattle University	1. Overall 2.5 gpa. 2. 2.75 gpa in major teaching field. 3. Interview with faculty member (usually).	California Achievement Test-50th percentile (Math, Reading, Language Arts, and Spelling).	1. Maintain 2.5 cum gpa. 2. Maintain 2.75 gpa in major teaching field. 3. 2.75 gpa in professional education courses. 4. Recommendation of undergraduate teacher education faculty. 5. Recommendation of academic dept. of secondary educa-	

REQUIREMENTS FOR TEACHER EDUCATION

	Admissions Requirements			
College/University	College Achievement and Other	Basic Skills	Retention Requirements	Exit Requirements
University of Puget Sound	1. Cumulative gpa of 2.25 or better. 2. GPA of 2.5 or better in academic area. 3. Recommended by academic major department.	1. Grade of "C" in written communication core requirement and in oral communication core requirement. 2. Stanford Test of Academic Skills (Reading, English, Math) (50th percentile).	1. Evidence of a strong commitment to teaching by attitude and performance through successful completion of the initial field experience, Education 301, Introduction to Teaching. 2. Cumulative gpa of 2.25. 3. Major gpa of 2.5. 4. GPA of 2.5 in ed. courses with no grade below C-.	1. Cumulative gpa of 2.25. 2. Major gpa of 2.5. 3. GPA of 2.5 in ed. courses with no grade below C-. 4. Successful performance in student teaching. 5. Completion of all degree requirements.
University of Washington	1. GPA at or above University average for all undergraduates (currently 3.0). 2. Recommended by major (academic) dept. 3. Completion of at least 70% of major. 4. Accepted by a school through interviews. 5. Successful prior experience with children.	1. Minimum score of 200 (79th percentile) on the California Achievement Test with no sub-test score below the 50th percentile. 2. Oral: pass interview in local school district.	1. Earn 2.0 or better in each of the professional education courses. 2. Satisfactory performance in the field each of the four quarters (elem) or three quarter (sec). 3. Continued acceptance in the schools.	1. A grade of 2.0 or better in each of the professional education courses. 2. Successful performance in the field experience -- on a 1-5 scale students must score 3 or above on all 11 observation items.
Walla Walla College	1. 2.5 gpa. 2. Pass proficiency exams in Basic Skills (exams designed by Math and English Depts.).	1. Oral: Clearance from Speech and Hearing Dept. 2. Computational: Complete four hours of Math from General Studies Requirement. 3. Composition: Attain minimum gpa in College Writing Class or complete English 129.	1. Completion of Phase 1 Ed. program courses. 2. No grade below C in any required course.	1. 2.5 gpa in major and minor with no grade below C. 2. 2.5 gpa in education courses with no grade below C.

REQUIREMENTS FOR TEACHER EDUCATION

	Admissions Requirements			
College/University	College Achievement and Other	Basic Skills	Retention Requirements	Exit Requirements
Washington State University	2.5 gpa.	1. 40th percentile on Writing, Reading, and Math sections of the Pre-professional Skills Test (ETS). If lower, students must earn at least a B- in specified courses. 2. Pass oral screening.	1. 2.0 gpa. 2. Completion of half of core ed. courses prior to student teaching.	1. 2.0 gpa 2. Satisfactory student teaching as determined by University supervisor with principal and cooperating teacher.
Western Washington University	1. 2.5 cum. gpa and 2.5 gpa at WWU (2.75 in 1985-87). 2. For elementary students, 2.0 in Education 399, Elementary Seminar.	1. Composition: Test for Standard Written English (50th percentile using H.S. senior norms): and grade "B" or better in English 101, composition/writing course. 2. Oral: Complete public speaking (Speech 101 or equivalent) with grade of "B" or better.	1. 2.5 gpa at WWU (2.75 in 1985-87). 2. C or better in each major and education course.	1. 2.5 gpa at WWU (2.75 in 1985-87). 2. Satisfactory student teaching as determined by Univ. supervisor in cooperation with cooperating teacher. 3. Computation: Elementary students must complete Math 281 (Theory of Arithmetic) and Math 481 (K-8 Math). All students are required to demonstrate computer competency.
Whitman College	1. 2.25 overall gpa. 2. Approval of Ed. Dept. faculty (interview). 3. Successful completion of introductory ed. courses (Ed. 111 & 112).	1. Oral: Interview process with Ed. Dept. Entry Committee. 2. Written Skills: Missouri College Level English Exam (70th percentile) and brief written essay. 3. Computational: Test, National Council of Teachers of Mathematics (70th percentile).	1. Good academic standing. 2. 2.5 gpa in major. 3. Positive recommendation of major department advisor. 4. C or better in each education course. 5. Approval of entrance committee of program unit.	1. Satisfactory completion of teacher ed. program as determined by program unit. 2. Completion of major. 3. Receipt of bachelor's degree. 4. Demonstrated competence in specific teaching dimensions.

Appendix B (cont.)

REQUIREMENTS FOR TEACHER EDUCATION

College/University	Admissions Requirements		Retention Requirements	Exit Requirements
	College Achievement and Other	Basic Skills		
Whitworth College	1. 2.5 gpa (in three areas: cumulative, educ. courses and in major).	Stanford TASK (Test of Academic Skills) by Harcourt, Brace, Janovich. TASK assesses reading, English, and Mathematics (70th percentile).	Evaluation conference in order to be admitted into upper division program. Each student meets with teachers of first two education courses to discuss work to date and self evaluation of competencies. Students are notified in writing of unconditional, conditional and nonadmissions.	Successful completion of student teaching with documented completion of all generic competencies.

Appendix C.1a. Analysis of Certification Program Requirements -- Elementary Certification with an Education Major or Specialization [a]

Institution and Program Description	Course Requirements as a Percentage of Total Credits for Graduation											
	Education-Related Major + Teaching Core[b]			Other Required Major or Minor-Unduplicated[c]			Minimum Unduplicated GUCR's[d]			Totals		
	Ed.[e]	Non-Ed.[f]	Total[g]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Elem. Ed. major, Special Ed. minor	47%	0%	47%	11%	0%	11%	0%	36%	36%	58%	36%	94%
Eastern Washington University Reading major, Early Ch. Ed. minor	52%	3%	56%	9%	0%	9%	2%	18%	20%	64%	21%	85%
University of Washington Bilingual Ed. major, Elem. Ed. minor	52%	22%	74%	--	--	--	0%	18%	18%	52%	40%	92%
Washington State University Reading major, no minor	56%	5%	61%	--	--	--	0%	23%	23%	55%	29%	84%
Western Washington University Elem. Ed. major, Reading Study-in-Depth (minor)	46%	2%	47%	12%	6%	17%	0%	25%	25%	57%	32%	89%
Gonzaga University Special Ed. major	54%	0%	54%	--	--	--	8%	27%	35%	62%	27%	89%
Heritage College Interdisciplinary minors—English, Social Studies, Math	45%	26%	71%	--	--	--	0%	18%	18%	45%	40%	86%
Northwest College Elem. Ed. major, School Disciplines Focus	25%	19%	43%	0%	24%	24%	0%	32%	32%	25%	75%	100%
Pacific Lutheran University Special Ed. major, Language Arts major	52%	3%	55%	5%	14%	19%	3%	28%	31%	60%	45%	105%
St. Martin's College Ed. major, Special Ed. minor	37%	13%	49%	20%	0%	20%	0%	15%	15%	57%	28%	84%
Seattle Pacific University Special Ed. major, Elem. Skills minor	57%	3%	59%	6%	3%	9%	0%	25%	25%	63%	31%	93%
Seattle University Special Ed. major, English & History Teaching Subjects	45%	2%	47%	3%	20%	23%	0%	23%	23%	49%	45%	94%

Appendix C.1a. (cont.) Analysis of Certification Program Requirements — Elementary Certification with an Education Major or Specialization [a]

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	Education-Related Major + Teaching Core[b]			Other Required Major or Minor-Unduplicated[c]			Minimum Unduplicated GUCR's[d]			Totals		
	Ed.[e]	Non-Ed.[f]	Total[g]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
University of Puget Sound Elem. Ed. major, 6 SC Academic Emphasis	34%	0%	34%	0%	19%	19%	0%	25%	25%	34%	44%	78%
Walla Walla College Elem. Ed. major, Library Science minor	30%	2%	32%	9%	6%	16%	0%	33%	33%	39%	41%	80%
Whitman College None offered	--	--	--	--	--	--	-	--	--	--	--	--
Whitworth College English major academic emphasis, Spec. ed., second academic area	46%	16%	62%	--	--	--	0%	24%	24%	46%	39%	86%
Average Percentage	45%	8%	53%	5%	6%	11%	1%	25%	26%	51%	38%	89%
Lowest Percentage Required	25%	0%	32%	0%	0%	0%	0%	18%	18%	25%	21%	78%
Highest Percentage Required	57%	26%	74%	20%	24%	24%	8%	36%	36%	64%	75%	105%

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[a] These programs are the most education-intensive routes to elementary certification available to undergraduates at these institutions. If an elementary education major is offered, it is the program selected for this table. At institutions not offering an elementary education major, the most education-related permitted major was chosen, with a preference for the reading major. One institution does not offer an education-related major. Because of this variation, the selected programs are not necessarily comparable in their content or purpose.

[b] These requirements include those for the indicated major and any other courses required for certification if they are listed separately from those in the major.

[c] Only additional majors or minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the education-related major or teaching core that also satisfy these requirements are excluded.

[d] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that are allowed to satisfy these requirements are excluded.

[e] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[f] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[g] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.1b. Analysis of Education Course Requirements -- Elementary Certification with an Education Major or Specialization [a]

Institution and Program	Content For Teachers[b]	Course Requirements as a Percentage of Total Credits for Graduation					
		Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTALS
Central Washington University, Campus-based	2%	15%	6%	24%	2%	9%	58%
Central Washington University, Field-based	2%	12%	6%	24%	5%	9%	58%
Eastern Washington University	4%	6%	7%	32%	6%	9%	64%
University of Washington	3%	3%	6%	19%	11%	10%	52%
Washington State University	0%	3%	8%	33%	3%	8%	55%
Western Washington University, Campus-based	8%	4%	3%	27%	6%	9%	57%
Western Washington University, Field-based	8%	2%	3%	22%	13%	9%	57%
Gonzaga University	5%	6%	7%	28%	2%	13%	62%
Heritage College	7%	9%	5%	15%	2%	8%	45%
Northwest College	1%	2%	5%	9%	3%	6%	25%
Pacific Lutheran University	6%	9%	8%	20%	5%	13%	60%
St. Martin's College	3%	2%	6%	27%	3%	17%	57%
Seattle Pacific University	6%	9%	11%	19%	3%	14%	63%
Seattle University	11%	2%	13%	16%	2%	6%	49%
University of Puget Sound	0%	3%	3%	14%	3%	11%	34%
Walla Walla College	0%	8%	6%	14%	4%	7%	39%
Whitman College	--	--	--	--	--	--	--
Whitworth College	5%	4%	8%	20%	1%	8%	46%
Average Percentage	4%	6%	7%	21%	4%	10%	51%
Lowest Percentage	0%	2%	3%	9%	1%	6%	25%
Highest Percentage	11%	15%	13%	33%	13%	17%	64%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.2a. Analysis of Certification Program Requirements — Elementary Certification with an English Major or Emphasis

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	English Major			Required Non-Education Minor Unduplicated[a]			Required Education Major or Minor + Teaching Core — Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Language Arts major, Elem. Ed. minor	4%	21%	25%	—	—	—	32%	0%	32%	0%	36%	36%	36%	57%	93%
Eastern Washington University English major, History minor, Prof. Core	8%	14%	22%	0%	10%	10%	36%	3%	39%	0%	16%	16%	43%	43%	86%
University of Washington English major, Elem. Ed. minor	6%	19%	25%	--	—	--	46%	6%	52%	0%	16%	16%	52%	42%	93%
Washington State University Language Arts major, Prof. Ed. minor	15%	10%	25%	—	—	--	36%	0%	36%	0%	23%	23%	51%	33%	84%
Western Washington University English major, Elem. Ed. minor Campus-Based	7%	18%	25%	--	--	--	32%	0%	32%	0%	25%	25%	38%	43%	82%
Western Washington University English major, Elem. Ed. minor Field-Based	7%	18%	25%	--	--	--	36%	0%	36%	0%	25%	25%	42%	43%	86%
Gonzaga University English major	0%	26%	26%	—	--	--	22%	0%	22%	5%	29%	34%	27%	55%	82%
Heritage College English major, History/Pol.Sci. minor	7%	17%	24%	0%	12%	12%	36%	0%	36%	0%	19%	19%	43%	48%	90%
Northwest College Language Arts Focus, Elem. Ed. major	0%	19%	19%	0%	24%	24%	25%	0%	25%	0%	32%	32%	25%	75%	100%
Pacific Lutheran University English major, Social Studies minor	3%	16%	19%	0%	12%	12%	30%	0%	30%	3%	28%	31%	36%	53%	89%
St. Martin's College English major, Education major	0%	29%	29%	—	--	--	37%	8%	44%	0%	13%	13%	37%	49%	86%
Seattle Pacific University English major, Elem. Skills minor	1%	32%	33%	—	—	—	36%	6%	42%	0%	19%	19%	38%	57%	95%
Seattle University B. Ed. Elem, English & History Teaching Subjects	5%	13%	18%	0%	13%	13%	39%	3%	42%	0%	21%	21%	45%	44%	89%

Appendix C.2a.(cont.) Analysis of Certification Program Requirements — Elementary Certification with an English Major or Emphasis

Course Requirements as a Percentage of total Credits for Graduation

Institution and Program Description	English Major			Required Non-Education Minor Unduplicated[a]			Required Education Major or Minor + Teaching Core— Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
University of Puget Sound English major, Elem. Ed. major	0%	31%	31%	--	--	--	34%	0%	34%	0%	25%	25%	34%	56%	91%
Walla Walla College English major, Elem. Ed. major	2%	28%	29%	--	--	--	30%	2%	32%	0%	26%	26%	31%	56%	87%
Whitman College English major	0%	27%	27%	--	--	--	32%	6%	38%	2%	23%	26%	35%	56%	91%
Whitworth College English major	11%	26%	37%	--	--	--	25%	0%	25%	0%	25%	25%	36%	50%	86%
Average Percentage	4%	22%	26%	0%	4%	4%	33%	2%	35%	1%	23%	24%	38%	51%	89%
Lowest Percentage	0%	10%	18%	0%	0%	0%	22%	0%	22%	0%	13%	13%	25%	31%	82%
Highest Percentage	15%	32%	37%	0%	24%	24%	46%	9%	52%	5%	36%	36%	52%	78%	100%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the English major that also satisfy these requirements are excluded.

[b] These requirements include those for the indicated education major or minor and any other courses required for certification if they are listed separately from those in the education major or minor. Courses in the English major or non-education minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that are allowed to satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.2b. Analysis of Education Course Requirements -- Elementary Certification with an English Major or Emphasis [a]

Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTALS
		Course Requirements as a Percentage of Total Credits for Graduation					
Central Washington University, Campus-based	2%	4%	4%	15%	2%	9%	36%
Central Washington University, Field-based	2%	1%	4%	15%	5%	9%	36%
Eastern Washington University	7%	3%	3%	18%	3%	9%	43%
University of Washington	6%	2%	7%	16%	11%	10%	52%
Washington State University	0%	0%	8%	33%	1%	8%	51%
Western Washington University, Campus-based	7%	4%	4%	14%	0%	9%	38%
Western Washington University, Field-based	7%	2%	3%	12%	9%	9%	42%
Gonzaga University	5%	2%	2%	9%	2%	7%	27%
Heritage College	5%	7%	6%	15%	2%	8%	43%
Northwest College	1%	2%	5%	9%	3%	6%	25%
Pacific Lutheran University	6%	5%	0%	14%	3%	8%	36%
St. Martin's College	3%	2%	6%	17%	2%	10%	37%
Seattle Pacific University	6%	4%	2%	13%	3%	9%	38%
Seattle University	8%	4%	5%	13%	2%	6%	45%
University of Puget Sound	0%	3%	3%	14%	3%	11%	34%
Walla Walla College	2%	5%	6%	10%	2%	7%	31%
Whitman College	0%	7%	9%	10%	1%	8%	35%
Whitworth College	5%	4%	5%	12%	1%	8%	36%
Average Percentage	4%	3%	5%	14%	3%	8%	38%
Lowest Percentage	0%	0%	0%	9%	0%	6%	25%
Highest Percentage	8%	7%	9%	33%	11%	11%	52%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.3a. **Analysis of Certification Program Requirements — Secondary Certification with a Biology major**

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	Biology Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Biology major, Chemistry minor	2%	23%	25%	0%	11%	11%	22%	0%	22%	0%	33%	33%	24%	67%	91%
Eastern Washington University Biology major with Supporting Courses, no minor	2%	38%	39%	--	--	--	24%	3%	28%	2%	16%	18%	28%	57%	85%
University of Washington Biology major, Chemistry minor	0%	26%	26%	0%	23%	23%	29%	3%	32%	0%	19%	19%	29%	71%	100%
Washington State University Biology major, Math/Science minor	3%	26%	28%	0%	20%	20%	22%	0%	22%	2%	23%	24%	26%	68%	94%
Western Washington University Biology major, no minor Campus-Based	5%	44%	49%	--	--	--	22%	0%	22%	0%	27%	27%	27%	71%	98%
Western Washington University Biology major, no minor Field-Based	5%	44%	49%	--	--	--	25%	0%	25%	0%	27%	27%	30%	71%	101%
Gonzaga University Biology major, no minor	0%	23%	23%	--	--	--	22%	0%	22%	0%	33%	33%	22%	56%	78%
Heritage College, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northwest College, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific Lutheran University Biology major, no minor	0%	34%	34%	--	--	--	23%	6%	30%	0%	31%	31%	23%	72%	95%
St. Martin's College Biology major, no minor	0%	53%	53%	--	--	--	28%	13%	41%	0%	12%	12%	28%	78%	106%
Seattle Pacific University Biology major, no minor	2%	36%	38%	--	--	--	26%	3%	29%	0%	28%	28%	28%	67%	95%
Seattle University Biology major, no minor	0%	24%	24%	--	--	--	24%	0%	24%	0%	22%	22%	24%	46%	70%
University of Puget Sound Biology major, English minor	0%	38%	38%	0%	16%	16%	25%	0%	25%	0%	16%	16%	25%	69%	94%
Walla Walla College Biology major, no minor	0%	55%	55%	--	--	--	22%	2%	24%	0%	22%	22%	22%	79%	101%

Appendix C.3a.(cont.) Analysis of Certification Program Requirements — Secondary Certification with a Biology Major

Institution and Program Description	Course Requirements as a Percentage of Total Credits for Graduation														
	Biology Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Totals	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Whitman College Biology major, no minor	0%	41%	41%	--	--	--	29%	2%	31%	2%	17%	19%	31%	60%	92%
Whitworth College Biology major, no minor	3%	34%	37%	--	--	--	25%	0%	25%	0%	21%	21%	28%	55%	83%
Average Percentage	1%	35%	36%	0%	5%	5%	25%	2%	27%	0%	23%	23%	26%	65%	92%
Lowest Percentage	0%	23%	23%	0%	0%	0%	22%	0%	22%	0%	12%	12%	22%	46%	70%
Highest Percentage	5%	55%	55%	0%	23%	23%	29%	13%	41%	2%	33%	33%	31%	79%	106%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the biology major that also satisfy these requirements are excluded.

[b] These are courses outside the major or minor that are required for certification. Courses in the major or minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that also satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.3b. Analysis of Education Course Requirements -- Secondary Certification with a Biology Major [a]

		Course Requirements as a Percentage of Total Credits for Graduation					
Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTAL
Central Washington University, Campus-based	0%	4%	4%	5%	2%	9%	24%
Central Washington University, Field-based	0%	1%	4%	5%	5%	9%	24%
Eastern Washington University	0%	3%	3%	9%	2%	9%	28%
University of Washington	0%	2%	4%	6%	7%	10%	29%
Washington State University	0%	0%	3%	13%	1%	8%	26%
Western Washington University, Campus-based	0%	4%	6%	8%	0%	9%	27%
Western Washington University, Field-based	0%	2%	4%	6%	9%	9%	30%
Gonzaga University	0%	2%	5%	7%	2%	7%	22%
Heritage College	--	--	--	--	--	--	--
Northwest College	--	--	--	--	--	--	--
Pacific Lutheran University	0%	3%	3%	6%	3%	8%	23%
St. Martin's College	3%	2%	6%	7%	2%	10%	28%
Seattle Pacific University	0%	2%	2%	4%	2%	19%	28%
Seattle University	0%	4%	5%	6%	2%	6%	24%
University of Puget Sound	0%	3%	3%	5%	3%	11%	25%
Walla Walla College	0%	3%	6%	4%	2%	6%	22%
Whitman College	0%	7%	9%	6%	1%	8%	31%
Whitworth College	0%	4%	7%	8%	1%	8%	28%
Average Percentage	0%	3%	5%	7%	3%	9%	26%
Lowest Percentage	0%	0%	3%	4%	0%	6%	22%
Highest Percentage	3%	7%	9%	13%	9%	19%	31%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.4a. Analysis of Certification Program Requirements — Secondary Certification with an English Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	English Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University English major, History minor	3%	22%	25%	1%	10%	11%	22%	0%	22%	0%	33%	33%	27%	64%	91%
Eastern Washington University English major, History minor	9%	17%	27%	0%	10%	10%	24%	3%	28%	2%	16%	18%	36%	46%	82%
University of Washington English major, no minor	8%	22%	31%	--	--	--	28%	3%	31%	0%	30%	30%	36%	56%	92%
Washington State University English major, History minor	3%	29%	32%	3%	15%	18%	22%	0%	22%	2%	20%	22%	28%	64%	93%
Western Washington University English major, no minor Campus-Based	7%	29%	36%	--	--	--	22%	0%	22%	0%	24%	24%	29%	53%	85%
Western Washington University English major, no minor Field-Based	7%	29%	36%	--	--	--	25%	0%	25%	0%	24%	24%	32%	53%	84%
Gonzaga University English major, no minor	5%	21%	26%	--	--	--	22%	0%	22%	0%	34%	34%	27%	54%	81%
Heritage College English major, History minor	5%	21%	25%	0%	13%	13%	36%	0%	36%	0%	19%	19%	40%	52%	93%
Northwest College	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific Lutheran University English major, no minor	0%	38%	38%	--	--	--	23%	6%	30%	0%	34%	34%	23%	78%	101%
St. Martin's College English major, History minor	0%	29%	29%	0%	15%	15%	28%	8%	36%	0%	13%	13%	28%	64%	93%
Seattle Pacific University English major, no minor	2%	32%	34%	--	--	--	25%	3%	28%	0%	27%	27%	27%	62%	89%
Seattle University English major, no minor	2%	32%	34%	--	--	--	24%	0%	24%	0%	16%	16%	26%	48%	74%
University of Puget Sound English major, no minor	0%	31%	31%	--	--	--	25%	0%	25%	0%	25%	25%	25%	56%	81%
Walla Walla College English major, History minor	3%	28%	31%	0%	10%	10%	22%	2%	24%	0%	31%	31%	25%	71%	96%

Appendix C.4a.(cont.) Analysis of Certification Program Requirements -- Secondary Certification with an English Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	English Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Totals	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Whitman College English major, no minor	0%	27%	27%	--	--	--	29%	2%	31%	2%	22%	24%	31%	52%	83%
Whitworth College English major, no minor	8%	29%	37%	--	--	--	25%	0%	25%	0%	26%	26%	33%	55%	88%
Average Percentage	4%	27%	31%	0%	5%	5%	25%	2%	27%	0%	25%	25%	30%	58%	88%
Lowest Percentage	0%	17%	25%	0%	0%	0%	22%	0%	22%	0%	13%	13%	23%	46%	74%
Highest Percentage	9%	38%	38%	3%	15%	18%	36%	8%	36%	2%	34%	34%	40%	78%	101%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the English major that also satisfy these requirements are excluded.

[b] These are courses outside the major or minor that are required for certification. Courses in the major or minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that also satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do no equal the total percentage because of rounding errors.

Appendix C.4b. Analysis of Education Course Requirements -- Secondary Certification with an English Major [a]

Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTALS
		Course Requirements as a Percentage of Total Credits for Graduation					
Central Washington University, Campus-based	0%	4%	4%	6%	4%	9%	27%
Central Washington University, Field-based	0%	1%	4%	6%	7%	9%	27%
Eastern Washington University	2%	3%	5%	15%	2%	9%	36%
University of Washington	3%	2%	7%	8%	7%	10%	36%
Washington State University	0%	0%	3%	16%	1%	8%	28%
Western Washington University, Campus-based	0%	4%	6%	10%	0%	9%	29%
Western Washington University, Field-based	0%	2%	4%	8%	9%	9%	32%
Gonzaga University	0%	2%	5%	12%	2%	7%	27%
Heritage College	2%	9%	5%	15%	2%	10%	40%
Northwest College	--	--	--	--	--	--	--
Pacific Lutheran University	0%	3%	3%	6%	3%	8%	23%
St. Martin's College	3%	2%	6%	7%	2%	10%	28%
Seattle Pacific University	0%	2%	2%	3%	2%	19%	27%
Seattle University	0%	4%	5%	7%	2%	6%	25%
University of Puget Sound	0%	3%	3%	5%	3%	11%	25%
Walla Walla College	3%	3%	6%	4%	2%	7%	26%
Whitman College	0%	7%	9%	6%	1%	8%	31%
Whitworth College	3%	4%	7%	11%	1%	8%	33%
Average Percentage	1%	3%	5%	9%	3%	9%	30%
Lowest Percentage	0%	0%	2%	3%	0%	6%	23%
Highest Percentage	3%	9%	9%	16%	9%	19%	40%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.5a. Analysis of Certification Program Requirements -- Secondary Certification with a History Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	History Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Broad Area History major, no minor	1%	35%	36%	--	--	--	22%	0%	22%	0%	36%	36%	23%	71%	94%
Eastern Washington University History major, Alternative 1, no minor	0%	34%	34%	--	--	--	24%	3%	28%	0%	13%	13%	24%	51%	75%
University of Washington History major, no minor	2%	31%	32%	--	--	--	26%	3%	29%	0%	30%	30%	28%	66%	93%
Washington State University History major, Political Science and English minors	3%	25%	28%	3%	28%	30%	22%	0%	22%	2%	15%	17%	28%	68%	96%
Western Washington University History major, Social Studies minor, Campus-Based	2%	32%	33%	0%	13%	13%	22%	0%	22%	0%	14%	14%	24%	59%	83%
Western Washington University History major, Social Studies minor, Field-Based	2%	32%	33%	0%	13%	13%	25%	0%	25%	0%	14%	14%	27%	59%	86%
Gonzaga University History major, no minor	0%	23%	23%	--	--	--	22%	0%	22%	0%	36%	36%	22%	59%	81%
Heritage College	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northwest College	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific Lutheran University History major, no minor	0%	34%	34%	--	--	--	23%	3%	27%	0%	31%	31%	23%	69%	92%
St. Martin's College History major, no minor	0%	37%	37%	--	--	--	28%	13%	41%	0%	15%	15%	28%	64%	93%
Seattle Pacific University History major, no minor	3%	28%	31%	--	--	--	26%	3%	29%	0%	31%	31%	29%	62%	91%
Seattle University History major, no minor	0%	29%	29%	--	--	--	24%	0%	24%	0%	26%	26%	24%	55%	79%
University of Puget Sound History major, no minor	0%	34%	34%	--	--	--	25%	0%	25%	0%	31%	31%	25%	66%	91%
Walla Walla College History major, English minor	0%	27%	27%	2%	14%	16%	22%	2%	24%	0%	28%	28%	23%	71%	94%

Appendix C.5a.(cont.) Analysis of Certification Program Requirements -- Secondary Certification with a History Major

Institution and Program Description	Course Requirements as a Percentage of Total Credits for Graduation														
	History Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Totals	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Whitman College History major, no minor	0%	29%	29%	--	--	—	29%	2%	31%	2%	22%	24%	31%	53%	85%
Whitworth College History major, no minor	3%	34%	37%	--	--	--	25%	0%	25%	0%	24%	24%	28%	58%	86%
Average Percentage	1%	31%	32%	0%	4%	4%	24%	2%	27%	0%	25%	25%	26%	62%	88%
Lowest Percentage	0%	23%	23%	0%	0%	0%	22%	0%	22%	0%	13%	13%	22%	51%	75%
Highest Percentage	3%	37%	37%	3%	28%	30%	28%	13%	41%	2%	36%	36%	31%	71%	96%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the history major that also satisfy these requirements are excluded.

[b] These are courses outside the major or minor that are required for certification. Courses in the major or minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that also satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.5b. Analysis of Education Course Requirements -- Secondary Certification with a History Major [a]

Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTAL
	Course Requirements as a Percentage of Total Credits for Graduation						
Central Washington University, Campus-based	0%	4%	4%	4%	2%	9%	23%
Central Washington University, Field-based	0%	1%	4%	4%	5%	9%	23%
Eastern Washington University	0%	3%	3%	8%	2%	9%	24%
University of Washington	0%	2%	4%	5%	7%	10%	28%
Washington State University	0%	0%	3%	16%	1%	8%	28%
Western Washington University, Campus-based	0%	4%	6%	5%	0%	9%	24%
Western Washington University, Field-based	0%	2%	4%	3%	9%	9%	27%
Gonzaga University	0%	2%	5%	7%	2%	7%	22%
Heritage College	--	--	--	--	--	--	--
Northwest College	--	--	--	--	--	--	--
Pacific Lutheran University	0%	3%	3%	6%	6%	8%	23%
St. Martin's College	3%	2%	6%	7%	2%	10%	28%
Seattle Pacific University	0%	2%	2%	5%	2%	19%	29%
Seattle University	0%	4%	6%	5%	2%	6%	24%
University of Puget Sound	0%	3%	3%	5%	3%	11%	25%
Walla Walla College	2%	3%	6%	4%	2%	7%	23%
Whitman College	0%	7%	9%	6%	1%	8%	31%
Whitworth College	0%	4%	7%	8%	1%	8%	28%
Average Percentage	0%	3%	5%	6%	3%	9%	26%
Lowest Percentage	0%	0%	2%	3%	0%	6%	22%
Highest Percentage	3%	7%	9%	16%	9%	19%	31%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.6a. Analysis of Certification Program Requirements — Secondary Certification with a Mathematics Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	Mathematics Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Math major, Physics minor	6%	19%	25%	0%	11%	11%	22%	0%	22%	0%	33%	33%	28%	63%	91%
Eastern Washington University Math major, no minor	4%	30%	34%	--	--	--	24%	3%	28%	2%	20%	22%	31%	53%	84%
University of Washington Math major, Physics minor	7%	21%	28%	6%	12%	17%	29%	3%	33%	0%	19%	19%	42%	55%	97%
Washington State University Math major, Physics minor	3%	24%	27%	3%	15%	18%	22%	0%	22%	2%	26%	28%	28%	65%	93%
Western Washington University Math major, no minor Campus-Based	2%	31%	33%	--	--	--	22%	0%	22%	0%	31%	31%	24%	62%	86%
Western Washington University Math major, no minor Field-Based	2%	31%	33%	--	--	--	25%	0%	25%	0%	31%	31%	27%	62%	89%
Gonzaga University Math major, no minor	0%	24%	24%	--	--	--	22%	0%	22%	0%	36%	36%	22%	60%	82%
Heritage College	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northwest College	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific Lutheran University Math major, no minor	0%	34%	34%	--	--	--	23%	6%	30%	0%	31%	31%	23%	72%	95%
St. Martin's College Math major, no minor	0%	45%	45%	--	--	--	28%	13%	41%	0%	15%	15%	28%	73%	101%
Seattle Pacific University Math major, no minor	2%	28%	30%	--	--	--	26%	3%	29%	0%	31%	31%	28%	62%	90%
Seattle University Math major, no minor	0%	24%	24%	--	--	--	24%	0%	24%	0%	22%	22%	24%	46%	70%
University of Puget Sound Math major, no minor	0%	33%	33%	--	--	--	25%	0%	25%	0%	31%	31%	25%	64%	89%
Walla Walla College B.A. Math, Physics minor	0%	25%	25%	0%	14%	14%	22%	2%	24%	0%	28%	28%	22%	69%	91%

Appendix C.6a. (cont.) Analysis of Certification Program Requirements -- Secondary Certification with a Mathematics Major

Institution and Program Description	Course Requirements as a Percentage of Total Credits for Graduation														
	Mathematics Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Totals	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Whitman College Math major, no minor	0%	27%	27%	--	--	--	29%	2%	31%	2%	22%	24%	31%	52%	83%
Whitworth College Math major, Physics Related Area	3%	24%	26%	0%	11%	11%	25%	0%	25%	0%	21%	21%	28%	55%	83%
Average Percentage	2%	28%	30%	1%	5%	5%	25%	2%	27%	0%	26%	27%	28%	61%	88%
Lowest Percentage	0%	19%	24%	0%	0%	0%	22%	0%	22%	0%	15%	15%	22%	46%	70%
Highest Percentage	7%	45%	45%	6%	15%	18%	29%	13%	41%	2%	36%	36%	42%	73%	95%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the mathematics major that also satisfy these requirements are excluded.

[b] These are courses outside the major or minor that are required for certification. Courses in the major or minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that also satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.6b. Analysis of Education Course Requirements -- Secondary Certification with Mathematics Major [a]

		Course Requirements as a Percentage of Total Credits for Graduation					
Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTALS
Central Washington University, Campus-based	2%	4%	4%	4%	4%	9%	28%
Central Washington University, Field-based	2%	1%	4%	4%	7%	9%	28%
Eastern Washington University	0%	3%	5%	12%	2%	9%	31%
University of Washington	12%	2%	4%	7%	7%	10%	42%
Washington State University	0%	0%	3%	16%	1%	8%	28%
Western Washington University, Campus-based	0%	4%	6%	6%	0%	9%	24%
Western Washington University, Field-based	0%	2%	4%	3%	9%	9%	27%
Gonzaga University	0%	2%	5%	7%	2%	7%	22%
Heritage College	--	--	--	--	--	--	--
Northwest College	--	--	--	--	--	--	--
Pacific Lutheran University	0%	3%	3%	6%	3%	8%	23%
St. Martin's College	3%	2%	6%	7%	2%	10%	28%
Seattle Pacific University	0%	2%	2%	3%	2%	19%	28%
Seattle University	0%	4%	5%	6%	2%	6%	24%
University of Puget Sound	0%	3%	3%	5%	3%	11%	25%
Walla Walla College	0%	3%	6%	4%	2%	7%	22%
Whitman College	0%	7%	9%	6%	1%	8%	31%
Whitworth College	0%	4%	7%	8%	1%	8%	28%
Average Percentage	1%	3%	5%	7%	3%	9%	28%
Lowest Percentage	0%	0%	2%	3%	1%	6%	22%
Highest Percentage	12%	7%	9%	16%	9%	19%	42%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

Appendix C.7a. Analysis of Certification Program Requirements -- Secondary Certification with a Social Studies Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	Social Studies Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum Unduplicated GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Central Washington University Social Science major, Broad area, No minor	3%	33%	36%	--	--	--	22%	0%	22%	0%	36%	36%	25%	69%	94%
Eastern Washington University Social Studies major, Alternative 2, no minor	2%	44%	47%	--	--	--	24%	3%	28%	0%	13%	13%	27%	61%	88%
University of Washington, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Washington State University Social Studies major, no minor	3%	32%	34%	3%	13%	15%	22%	0%	22%	2%	25%	27%	28%	70%	98%
Western Washington University Political Science major, Social Studies minor, Campus-Based	0%	33%	33%	0%	13%	13%	24%	0%	24%	0%	14%	14%	24%	61%	85%
Western Washington University Political Science major, Social Studies minor, Field-Based	0%	33%	33%	0%	13%	13%	27%	0%	27%	0%	14%	14%	27%	61%	88%
Gonzaga University, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heritage College History/Political Science major, English minor	0%	25%	25%	5%	8%	13%	36%	0%	36%	0%	21%	21%	41%	55%	95%
Northwest College, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific Lutheran University Social Science major, no minor	0%	34%	34%	--	--	--	23%	3%	27%	0%	31%	31%	23%	69%	92%
St. Martin's College Social Studies major, no minor	0%	41%	41%	--	--	--	28%	13%	41%	0%	15%	15%	28%	68%	97%
Seattle Pacific University Social Studies major, no minor	2%	39%	41%	--	--	--	26%	3%	29%	0%	28%	28%	28%	71%	98%
Seattle University Social Studies major, Comprehensive Endorsement	0%	37%	37%	--	--	--	24%	0%	24%	0%	19%	19%	24%	48%	80%
University of Puget Sound, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Walla Walla College, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix C.7a.(cont.) Analysis of Certification Program Requirements — Secondary Certification with a Social Studies Major

Course Requirements as a Percentage of Total Credits for Graduation

Institution and Program Description	Social Studies Major			Required Minor Unduplicated[a]			Teaching Core Unduplicated[b]			Minimum GUCR's[c]			TOTALS		
	Ed.[d]	Non-Ed.[e]	Total[f]	Ed.	Non-Ed.	Totals	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total	Ed.	Non-Ed.	Total
Whitman College History major, Recommended for Social Studies	0%	69%	69%	--	--	--	26%	0%	26%	6%	16%	22%	31%	85%	117%
Whitworth College, none offered	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Average Percentage	1%	39%	40%	1%	3%	4%	26%	2%	28%	1%	22%	23%	28%	66%	95%
Lowest Percentage	0%	25%	25%	0%	0%	0%	22%	0%	22%	0%	13%	13%	23%	55%	80%
Highest Percentage	3%	69%	69%	5%	13%	15%	36%	13%	41%	6%	36%	36%	41%	85%	117%

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[a] Only additional minors that are required for certification are included. Students may elect other minors at most institutions. Courses in the social studies major that also satisfy these requirements are excluded.

[b] These are courses outside the major or minor that are required for certification. Courses in the major or minor that also satisfy these requirements are excluded.

[c] These courses are the General University Course Requirements -- the basic skills and distribution requirements for graduation. Courses in the major, minor, or teaching core that also satisfy these requirements are excluded.

[d] These are courses offered by education departments or those offered by other departments which are described as being for teachers or about education. When the requirements permit student choice, education courses if offered and appropriate to the program were selected.

[e] These are courses which do not qualify as education courses as defined above. These percentages reflect the minimum number of non-education courses needed to meet the institutions' requirements.

[f] In some cases, the percentages of education and non-education courses do not equal the total percentage because of rounding errors.

Appendix C.7b. Analysis of Education Course Requirements — Secondary Certification with a Social Studies Major [a]

		Course Requirements as a Percentage of Total Credits for Graduation					
Institution and Program	Content for Teachers[b]	Foundations and Others[c]	Ed. Psych. and Human Development[d]	Curriculum, Materials and Methods[e]	Field Work Courses[f]	Student Teaching[g]	TOTALS
Central Washington University, Campus-based	0%	4%	4%	6%	2%	9%	25%
Central Washington University, Field-based	0%	1%	4%	6%	5%	9%	25%
Eastern Washington University	0%	3%	3%	10%	2%	9%	27%
University of Washington	--	--	--	--	--	--	--
Washington State University	0%	0%	3%	16%	1%	8%	28%
Western Washington University, Campus-based	0%	4%	6%	5%	0%	9%	24%
Western Washington University, Field-based	0%	2%	4%	3%	9%	9%	27%
Gonzaga University	--	--	--	--	--	--	--
Heritage College	2%	9%	5%	15%	2%	8%	41%
Northwest College	--	--	--	--	--	--	--
Pacific Lutheran University	0%	3%	3%	6%	3%	8%	23%
St. Martin's College	3%	2%	6%	7%	2%	10%	28%
Seattle Pacific University	0%	2%	2%	3%	2%	19%	28%
Seattle University	0%	4%	5%	6%	2%	6%	24%
University of Puget Sound	--	--	--	--	--	--	--
Walla Walla College	--	--	--	--	--	--	--
Whitman College	0%	7%	9%	6%	1%	8%	31%
Whitworth College	--	--	--	--	--	--	--
Average Percentage	1%	4%	5%	8%	2%	9%	28%
Lowest Percentage	0%	0%	2%	3%	0%	6%	23%
Highest Percentage	3%	9%	9%	16%	9%	19%	41%

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[a] These are the same programs analyzed in the previous table.

[b] Subject matter courses, usually taught outside education departments, that are listed as specifically intended for prospective teachers. Most frequently mathematics and English courses.

[c] General introductory courses; courses in the social, philosophical, and historical foundations of education; and occasionally courses not classifiable in any other category.

[d] Required courses in psychology, whether or not they are taught within education departments.

[e] Courses in the design of instruction and in general and subject-matter-specific methods of teaching.

[f] Courses specifically and primarily focusing upon practical work with students, in schools, or in other agencies serving school-age children. Required courses listed in other categories may include field work.

[g] Courses involving students' full-time participation in schools, usually the culminating requirement of the teacher preparation sequence.

APPENDIX D

BASIC DATA
INITIAL AND PROVISIONAL CERTIFICATE COMPLETERS
1982-83

1	NAME
2	RECOMMENDING INSTITUTION
3	DATE OF BIRTH
4	SEX
5	ETHNICITY
6	CERTIFICATE DATE
7	CERTIFICATE TYPE
8	ENDORSEMENTS AND LEVELS
9	
10	
11	DATE OF BACHELOR'S DEGREE
12	DATE OF PROGRAM COMPLETION
13	OVERALL G.P.A. AT RECOMMENDING INSTITUTION
14	MAJOR G.P.A.
15	MAJOR(S)
16	
17	MINOR(S)
18	
19	
20	WPCT VERBAL
21	WPCT QUANTITATIVE
22	EMPLOYMENT STATUS FALL 1983

Transcript Analysis
University of Washington

Biology -- BIOC, BIOEN, BI HS, BIOL, BOT, B STR, EVN S, FOR B,
GENET, MEDCH, MICRO, PATH, P BIO, ZOOL

23 ____ n-ed BIOL 104-5, 499-1-5
24 ____ ed

Other Science -- AA, ASTR, ATM s, CER E, CEWA, CH E, CHEM, CIVE, E E, ENGR, FISH,
FOR P, GEOL, GPHY, H A&S 220-22, M E, MET E, MIN E, NUC E, OCEAN,
25 ____ n-ed O ENG, PCEUT, PHYS
26 ____ ed PHYS 210/11/12-5, 405/6-2, 407/8/9-5, 410-1-2, 411/12/13-1-4,
539-

Com. & Lang. -- CMU, DRAMA, FREN, GERM, LAT, LING, SPAN, SPCH
CMU 463-5
DRAMA 200-3, 336-3, 435-3, 436-3, 536/7/8-4
FREN 474-5
27 ____ n-ed GERM 479-3, 575/6/7-3
28 ____ ed LAT 475/6-3
LING 445-3, 449-3
SPAN 128-5
SPCH 203-5, 341-2 1/2, 455-4, 456-4, 550-3

Education -- EDADM, EDC&I, EDEPS, EDHEC, EDPSY, EDUC
29 ____ ed

English -- ENGL

30 ____ n-ed ENGL 441/2/3-5, 444-3-5, 504-5, 555/6/7/8-5, 560-3-6
31 ____ ed

Other Hum. -- ART, ART H, CHID, CLAS, CLIT, DANCE, H A&S 210-12,
MUSAP, MUSIC, PHIL, RELIG
32 ____ n-ed ART 200-3, 300/1/2/2/4-3, 491/2/3/4-2
33 ____ ed MUSIC 220/1/6/7/9/30-3, 231-1-2, 232-1, 340-3, 431/2-3.
434/5/6-2, 440/1/2/3-3, 496-1-3, 524/5-3,
530-3, 540-3, 542-3, 551-3, 561-3

History -- HST, HSTAA, HSTAM, HSTAS, HSTEU

34 ____ n-ed
35 ____ ed

Other Soc. Sci. -- AAS, AFRAM, AIS, ANTH, ARCHY, B ECN, BS&G, CHSTU, CLAR,
ECON, GEOG, H A&S 230-32, HSS, LAE, PHY A, POL S, PSYCH,
36 ____ n-ed SIS, SISAF, SISEA, SISRE, SISSA, SOC, SO JU, WOMEN
37 ____ ed PSYCH 516-3
WOMEN 415-3, 416-3

Math -- AMATH, CSCI, MATH, QMETH, Q SCI, STAT

38 ____ n-ed MATH 170/1-3, 411/12-3, 444/5-3, 497-2-5
39 ____ ed

Other -- H ED, KIN, KINPE, LIBR, NUTR
H ED 251-3, 471-2, 481-3
40 ____ n-ed KIN 303-4
41 ____ ed KINPE 295-2, 311-2, 312-2 1/2, 314-3, 316-3 365-4,
455-4, 460-3, 502-3-5, 503-1, 506-3
LIBR 450-3, 451-3, 549-3, 550-3, 551-2, 568-3, 570-3
NUTR 360-3, 560-1-5

TABLE E-1: CUMULATIVE GPA COMPARISONS FOR STUDENTS WITH ELEMENTARY ENDORSEMENTS

		INSTITUTION				
		CWU	EWU	UW	WSU	WWU
ALL GRADUATES	AVERAGE GPA	2.960	3.080	3.050	2.870	3.000
CERTIFICATE EARNERS	AVERAGE GPA	3.161	3.140	3.243	3.034	3.167
	LOW GPA	2.100	2.170	2.220	2.120	2.360
	HIGH GPA	3.970	3.940	3.830	3.980	3.950
BREAKDOWN BY THE ALL-GRAD AVERAGE GPA						
# ABOVE ALL-GRAD AVG	% OF ALL C-EARNERS	66.038	54.118	69.784	71.111	68.421
# BELOW ALL-GRAD AVG	% OF ALL C-EARNERS	33.962	45.882	30.216	28.889	31.579
QUINTILE BREAKDOWN						
# IN BOTTOM QUINT	% OF ALL C-EARNERS	8.491	14.118	10.791	5.926	7.018
# IN SECOND QUINT	% OF ALL C-EARNERS	13.679	20.000	19.424	13.333	13.450
# IN THIRD QUINT	% OF ALL C-EARNERS	18.396	18.235	13.669	22.222	25.731
# IN FOURTH QUINT	% OF ALL C-EARNERS	24.057	18.824	25.899	30.370	26.901
# IN TOP QUINT	% OF ALL C-EARNERS	35.377	28.824	30.216	28.148	26.901

Table E-2: CUMULATIVE GPA COMPARISONS FOR STUDENTS WITH SECONDARY ENDORSEMENTS

		INSTITUTION				
		CWU	EWU	UW	WSU	WWU
ALL GRADUATES	AVERAGE GPA	2.960	3.030	3.050	2.870	3.000
CERTIFICATE EARNERS	AVERAGE GPA	2.978	3.073	3.212	3.028	3.063
	LOW GPA	2.150	2.040	2.500	2.080	2.400
	HIGH GPA	3.890	3.900	3.910	3.960	3.980
BREAKDOWN BY THE ALL-GRAD AVERAGE GPA						
# ABOVE ALL-GRAD AVG	% OF ALL C-EARNERS	50.806	51.948	71.429	61.538	53.750
# BELOW ALL-GRAD AVG	% OF ALL C-EARNERS	49.194	48.052	28.571	38.462	46.250
QUINTILE BREAKDOWN						
# IN BOTTOM QUINT	% OF ALL C-EARNERS	12.903	21.429	10.204	12.821	12.500
# IN SECOND QUINT	% OF ALL C-EARNERS	25.000	20.130	18.367	16.239	19.375
# IN THIRD QUINT	% OF ALL C-EARNERS	20.161	15.584	25.510	16.239	26.250
# IN FOURTH QUINT	% OF ALL C-EARNERS	21.774	24.026	15.306	23.932	24.375
# IN TOP QUINT	% OF ALL C-EARNERS	20.161	18.831	30.612	30.769	17.500

TABLE E-3:CUMULATIVE GPA COMPARISONS FOR STUDENTS WITH K-12 ENDORSEMENTS

		INSTITUTION				
		CWU	EWU	UW	WSU	WWU
ALL GRADUATES	AVERAGE GPA	2.960	3.000	3.050	2.870	3.000
CERTIFICATE EARNERS	AVERAGE GPA	3.201	3.152	3.289	3.278	2.962
	LOW GPA	2.150	2.340	2.690	2.660	2.540
	HIGH GPA	3.970	3.870	3.620	3.700	3.630
BREAKDOWN BY THE ALL-GRAD AVERAGE GPA						
# ABOVE ALL-GRAD AVG	% OF ALL C-EARNERS	68.354	75.000	93.333	88.889	45.000
# BELOW ALL-GRAD AVG	% OF ALL C-EARNERS	31.646	25.000	6.667	11.111	55.000
QUINTILE BREAKDOWN						
# IN BOTTOM QUINT	% OF ALL C-EARNERS	2.532	25.000	6.667		10.000
# IN SECOND QUINT	% OF ALL C-EARNERS	12.658			11.111	35.000
# IN THIRD QUINT	% OF ALL C-EARNERS	26.532	25.000	33.333	11.111	30.000
# IN FOURTH QUINT	% OF ALL C-EARNERS	18.987	25.000	33.333	33.333	20.000
# IN TOP QUINT	% OF ALL C-EARNERS	39.241	25.000	26.667	44.444	5.000

Table E-4: QUARTER HOURS TAKEN BY ELEMENTARY TEACHERS;

	ALL INSTITUTIONS			INSTITUTION														
				CWU			EWU			UW			WSU			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	219	391	181	203	356	181	217	298	183	239	391	200	212	310	102	224	259	181
TOTAL NON-EDUCATION	123	283	61	106	238	61	107	204	68	154	283	119	117	231	85	136	191	101
TOTAL EDUCATION	96	149	60	100	148	63	110	149	70	84	107	67	95	120	73	83	116	60
TOTAL UNCLASSIFIED	1	22	0	3	16	0	0	2	0	1	22	0	0	0	0	1	10	0
BIOLOGY -- NON-EDUC.	7	41	0	6	17	0	5	18	0	8	41	0	9	32	5	8	34	0
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
" -- TOTAL	7	41	0	6	17	0	5	18	0	8	41	0	9	32	5	8	34	0
OTHER SCIENCES -- NON-EDUC.	8	48	0	6	28	0	7	37	0	12	48	0	7	29	0	10	37	0
" -- EDUCATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" -- TOTAL	8	48	0	6	28	0	7	37	0	12	48	0	7	29	0	10	37	0
FOR. LANG/COMM -- NON-EDUC.	14	77	0	13	44	0	12	77	0	19	73	0	15	29	0	10	31	0
" -- EDUCATION	1	10	0	1	7	0	2	10	0	1	6	0	1	9	0	1	6	0
" -- TOTAL	15	84	0	14	44	0	14	84	0	21	73	3	16	34	0	11	31	3
EDUCATION DEPARTMENTS TOTAL	78	133	33	81	128	42	91	133	55	77	95	61	76	101	59	65	100	33
ENGLISH -- NON-EDUC.	13	60	0	13	44	3	15	38	5	16	60	0	10	45	5	11	30	4
" -- EDUCATION	2	10	0	2	3	0	2	7	0	1	10	0	0	0	0	3	8	0
" -- TOTAL	15	70	0	15	47	6	17	45	5	17	70	0	10	45	5	15	32	5
OTHER HUMANITIES- NON-EDUC.	14	98	0	16	50	2	14	84	0	14	67	0	10	51	0	16	98	5
" -- EDUCATION	3	12	0	4	7	0	3	6	0	2	12	0	3	8	0	2	10	0
" -- TOTAL	17	108	0	19	50	5	17	90	0	15	67	0	14	59	3	18	108	5
HISTORY -- NON-EDUC.	8	61	0	6	24	0	5	15	0	8	50	0	9	54	0	13	61	0
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
" -- TOTAL	9	61	0	6	24	0	5	15	0	8	50	0	10	59	0	13	61	0
OTHER SOCIAL SCI- NON-EDUC.	35	182	5	24	96	5	24	114	9	56	182	15	39	77	9	35	77	8
" -- EDUCATION	4	14	0	8	14	0	0	0	0	0	3	0	2	5	0	6	13	0
" -- TOTAL	38	182	9	31	96	11	24	114	9	56	182	15	40	82	9	41	83	10
MATHEMATICS -- NON-EDUC.	6	46	0	6	19	0	5	27	0	6	26	0	5	15	0	9	46	0
" -- EDUCATION	5	34	0	2	12	0	10	34	0	2	9	0	5	9	0	7	10	0
" -- TOTAL	11	50	0	7	27	0	15	43	4	8	35	0	10	21	5	16	50	5
OTHER FIELDS -- NON-EDUC.	18	87	0	17	59	2	18	87	0	16	78	0	14	27	0	24	87	0
" -- EDUCATION	3	22	0	3	9	0	3	22	0	0	0	0	8	14	0	4	14	0
" -- TOTAL	21	90	0	20	59	4	21	87	0	16	78	0	21	38	6	27	90	0

TABLE E-5: QUARTER HOURS OF COURSE WORK TAKEN BY ELEMENTARY TEACHERS

		ALL INSTITUTIONS							
		MAJORS				NON-MAJORS			
		PERCENT OF STUDENTS	AVERAGE QUARTER HOURS	LOW	HIGH	PERCENT OF STUDENTS	AVERAGE QUARTER HOURS	LOW	HIGH
SUBJECT									
BIOLOGY	-NON-EDUCATION					100.00	6.99	0	41
	- EDUCATION					100.00	0.03	0	5
	- TOTAL					100.00	7.02	0	41
OTHER SCIENCE	-NON-EDUCATION	3.23	39.00	28	48	96.77	7.13	0	37
	- EDUCATION	3.23	0.00	0	0	96.77	0.00	0	0
	- TOTAL	3.23	39.00	28	48	96.77	7.13	0	37
COMMUNICATION & LANGUAGE	-NON-EDUCATION	3.23	47.40	9	77	96.77	12.57	0	44
	- EDUCATION	3.23	4.00	0	10	96.77	1.13	0	9
	- TOTAL	3.23	51.40	9	84	96.77	13.69	0	44
EDUCATION	-NON-EDUCATION								
	- EDUCATION	63.23	82.60	40	133	36.77	68.93	33	106
	- TOTAL								
ENGLISH	-NON-EDUCATION	3.87	49.33	38	60	96.13	11.92	0	45
	- EDUCATION	3.87	5.00	0	10	96.13	1.60	0	8
	- TOTAL	3.87	54.33	45	70	96.13	13.52	0	45
OTHER HUMANITIES	-NON-EDUCATION	5.81	52.89	15	98	94.19	11.98	0	84
	- EDUCATION	5.81	5.44	0	12	94.19	2.47	0	7
	- TOTAL	5.81	58.33	15	108	94.19	14.45	0	90
HISTORY	-NON-EDUCATION	3.23	55.00	50	61	96.77	7.05	0	45
	- EDUCATION	3.23	1.00	0	5	96.77	0.03	0	5
	- TOTAL	3.23	56.00	50	61	96.77	7.08	0	50
OTHER SOCIAL SCIENCES	-NON-EDUCATION	12.26	73.53	34	182	87.74	28.99	5	114
	- EDUCATION	12.26	2.11	0	13	87.74	3.81	0	14
	- TOTAL	12.26	75.63	34	182	87.74	32.79	9	114
MATHEMATICS	-NON-EDUCATION	1.94	19.67	4	46	98.06	5.80	0	27
	- EDUCATION	1.94	23.67	4	34	98.06	4.74	0	20
	- TOTAL	1.94	43.33	37	50	98.06	10.55	0	35
OTHER SUBJECTS	-NON-EDUCATION	4.52	58.00	29	87	95.48	15.68	0	87
	- EDUCATION	4.52	0.43	0	3	95.48	3.48	0	22
	- TOTAL	4.52	58.43	29	90	95.48	19.16	0	87

Table E-6: QUARTER HOURS TAKEN BY SECONDARY BIOLOGY TEACHERS;

	ALL INSTITUTIONS			INSTITUTION														
				CWU			EWU			UW			WSU			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	251	370	194	252	352	194	240	319	198	267	327	238	248	312	212	269	370	202
TOTAL NON-EDUCATION	192	319	125	200	307	128	180	273	125	203	257	183	187	252	149	216	319	153
TOTAL EDUCATION	58	96	41	46	51	41	59	73	41	64	74	51	60	96	46	51	65	45
TOTAL UNCLASSIFIED	1	15	0	5	15	0	1	3	0	0	0	0	0	5	0	0	0	0
BIOLOGY -- NON-EDUC.	52	166	16	69	90	49	38	73	16	61	88	41	51	90	23	69	166	31
" -- EDUCATION	1	5	0	0	0	0	1	3	0	0	0	0	4	5	0	0	0	0
" -- TOTAL	53	166	19	69	90	49	38	76	19	61	88	41	56	95	24	69	166	31
OTHER SCIENCES -- NON-EDUC.	32	93	0	35	93	5	19	56	0	41	69	5	31	52	5	54	69	33
" -- EDUCATION	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0
" -- TOTAL	32	93	0	35	93	5	20	56	0	41	69	5	31	52	5	54	69	33
FOR. LANG/COMM -- NON-EDUC.	10	76	0	8	17	0	9	22	3	17	76	5	8	21	0	13	37	3
" -- EDUCATION	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
" -- TOTAL	11	76	0	8	17	0	9	22	3	17	76	5	8	21	0	14	37	3
EDUCATION DEPARTMENTS TOTAL	46	88	33	37	39	33	43	54	38	60	70	51	47	88	33	39	43	35
ENGLISH -- NON-EDUC.	15	72	0	12	21	4	14	62	6	12	20	6	21	72	0	9	16	4
" -- EDUCATION	0	5	0	0	0	0	0	4	0	0	0	0	1	5	0	0	0	0
" -- TOTAL	15	77	0	12	21	4	15	66	6	12	20	6	22	77	0	9	16	4
OTHER HUMANITIES- NON-EDUC.	15	119	0	12	18	9	13	33	0	18	70	0	19	119	0	8	16	0
" -- EDUCATION	0	15	0	0	0	0	0	0	0	0	0	0	2	15	0	0	0	0
" -- TOTAL	15	128	0	12	18	9	13	33	0	18	70	0	21	128	0	8	16	0
HISTORY -- NON-EDUC.	7	53	0	4	8	0	7	40	0	5	10	0	8	53	0	7	14	3
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
" -- TOTAL	7	58	0	4	8	0	7	40	0	5	10	0	9	58	0	7	14	3
OTHER SOCIAL SCI- NON-EDUC.	24	113	8	26	37	18	30	113	8	24	30	14	18	31	10	20	42	10
" -- EDUCATION	2	11	0	9	11	8	0	0	0	0	0	0	1	10	0	10	10	7
" -- TOTAL	26	113	8	35	45	26	30	113	8	24	30	14	19	31	10	30	52	20
MATHEMATICS -- NON-EDUC.	13	65	0	20	65	0	10	45	0	19	28	0	11	17	3	17	28	13
" -- EDUCATION	1	12	0	0	0	0	0	5	0	4	12	0	0	0	0	0	0	0
" -- TOTAL	14	65	0	20	65	0	10	45	0	23	40	0	11	17	3	17	28	13
OTHER FIELDS -- NON-EDUC.	24	96	0	14	24	3	40	96	2	7	40	0	19	53	4	20	65	2
" -- EDUCATION	7	33	0	1	6	0	15	29	0	0	2	0	5	33	0	2	17	0
" -- TOTAL	31	96	0	16	27	3	54	96	2	7	40	0	24	78	4	23	65	2

Table E-7: QUARTER HOURS TAKEN BY SECONDARY ENGLISH/LA TEACHERS;

	ALL INSTITUTIONS			INSTITUTION														
				CWU			EWU			UW			WSU			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	236	370	182	260	356	198	224	322	182	243	370	194	238	329	188	233	353	188
TOTAL NON-EDUCATION	178	315	124	207	306	145	168	257	129	182	315	124	174	249	133	176	304	133
TOTAL EDUCATION	58	102	40	53	78	40	55	75	40	62	75	48	63	102	47	58	72	46
TOTAL UNCLASSIFIED	0	16	0	0	0	0	1	5	0	0	0	0	1	16	0	0	5	0
BIOLOGY -- NON-EDUC.	9	78	0	4	10	0	11	78	0	11	60	0	15	50	5	4	12	0
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0
" -- TOTAL	9	78	0	4	10	0	11	78	0	11	60	0	16	55	5	4	12	0
OTHER SCIENCES -- NON-EDUC.	9	36	0	6	20	0	7	27	0	9	24	0	10	35	0	10	36	0
" -- EDUCATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
" -- TOTAL	9	36	0	6	20	0	7	27	0	9	24	0	10	35	0	10	36	0
FOR. LANG/COMM -- NON-EDUC.	24	98	0	31	62	11	18	50	0	32	97	5	19	59	0	23	98	0
" -- EDUCATION	1	7	0	1	7	0	1	5	0	1	5	0	1	5	0	1	4	0
" -- TOTAL	24	98	0	33	62	11	19	54	0	32	97	5	19	59	0	24	98	3
EDUCATION DEPARTMENTS TOTAL	47	72	28	41	61	32	45	65	28	57	64	48	49	72	39	43	60	34
ENGLISH -- NON-EDUC.	58	165	9	66	165	22	51	85	9	70	154	41	46	72	23	60	75	12
" -- EDUCATION	4	14	0	5	11	0	3	4	0	3	10	0	4	14	0	5	12	0
" -- TOTAL	62	165	9	71	165	22	54	85	9	74	159	41	50	77	28	65	83	16
OTHER HUMANITIES- NON-EDUC.	17	138	0	25	68	3	21	138	5	14	44	0	11	30	0	18	57	0
" -- EDUCATION	0	8	0	0	0	0	1	8	0	0	3	0	1	5	0	0	0	0
" -- TOTAL	17	146	0	25	68	3	22	146	5	14	44	0	12	35	0	18	57	0
HISTORY -- NON-EDUC.	15	73	0	8	27	0	11	73	0	10	30	0	20	60	0	20	65	0
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0
" -- TOTAL	15	73	0	8	27	0	11	73	0	10	30	0	22	65	0	20	65	0
OTHER SOCIAL SCI- NON-EDUC.	29	135	5	31	49	15	29	108	10	25	50	13	36	135	6	27	113	5
" -- EDUCATION	3	10	0	7	8	0	0	3	0	0	3	0	0	0	0	8	10	0
" -- TOTAL	32	135	6	37	49	23	29	108	10	26	50	13	36	135	6	35	113	15
MATHEMATICS -- NON-EDUC.	5	26	0	5	10	0	6	13	0	5	15	0	6	26	0	6	15	0
" -- EDUCATION	0	9	0	0	0	0	1	5	0	0	3	0	1	9	0	0	0	0
" -- TOTAL	6	26	0	5	10	0	7	13	0	5	15	0	6	26	0	6	15	0
OTHER FIELDS -- NON-EDUC.	12	93	0	31	93	2	15	53	0	6	23	0	12	44	0	8	26	0
" -- EDUCATION	2	45	0	0	0	0	4	28	0	0	0	0	6	45	0	1	10	0
" -- TOTAL	14	93	0	31	93	2	19	81	0	6	23	0	17	89	3	9	33	0

Table E-8: QUARTER HOURS TAKEN BY SECONDARY HIST/GOVT TEACHERS;

	ALL INSTITUTIONS			INSTITUTION					
				UW			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	239	360	182	245	360	189	233	328	182
TOTAL NON-EDUCATION	185	285	128	187	276	139	182	265	128
TOTAL EDUCATION	55	84	43	58	84	50	51	63	43
TOTAL UNCLASSIFIED	0	4	0	0	0	0	0	4	0
BIOLOGY -- NON-EDUC.	6	14	0	7	13	0	5	14	0
¤ -- EDUCATION	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	6	14	0	7	13	0	5	14	0
OTHER SCIENCES -- NON-EDUC.	10	25	0	9	25	0	11	20	4
¤ -- EDUCATION	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	10	25	0	9	25	0	11	20	4
FOR. LANG/COMM -- NON-EDUC.	21	117	0	27	117	0	15	62	0
¤ -- EDUCATION	0	3	0	0	3	0	1	3	0
¤ -- TOTAL	22	117	0	27	117	0	16	65	3
EDUCATION DEPARTMENTS TOTAL	49	81	33	57	81	50	40	50	33
ENGLISH -- NON-EDUC.	18	74	3	19	74	3	17	67	4
¤ -- EDUCATION	1	8	0	0	5	0	1	8	0
¤ -- TOTAL	19	75	3	20	74	3	18	75	4
OTHER HUMANITIES- NON-EDUC.	13	47	0	11	28	0	15	47	5
¤ -- EDUCATION	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	13	47	0	11	28	0	15	47	5
HISTORY -- NON-EDUC.	56	155	19	51	72	19	62	155	23
¤ -- EDUCATION	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	56	155	19	51	72	19	62	155	23
OTHER SOCIAL SCI- NON-EDUC.	43	108	13	51	108	13	35	75	15
¤ -- EDUCATION	4	10	0	0	3	0	8	10	7
¤ -- TOTAL	47	108	13	51	108	13	43	85	25
MATHEMATICS -- NON-EDUC.	5	20	0	4	20	0	6	15	0
¤ -- EDUCATION	0	3	0	0	3	0	0	0	0
¤ -- TOTAL	5	20	0	4	20	0	6	15	0
OTHER FIELDS -- NON-EDUC.	12	74	0	9	25	0	15	74	0
¤ -- EDUCATION	0	6	0	0	0	0	1	6	0
¤ -- TOTAL	12	74	0	9	25	0	16	74	0

Table E-9: QUARTER HOURS TAKEN BY SECONDARY MATHEMATICS TEACHERS;

	ALL INSTITUTIONS			INSTITUTION														
				CWU			EWU			UW			WSU			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	238	352	180	234	352	185	231	265	197	270	331	225	216	246	183	226	292	180
TOTAL NON-EDUCATION	177	307	125	183	307	129	173	214	137	198	247	138	155	177	143	170	250	125
TOTAL EDUCATION	60	96	40	49	53	43	57	81	44	72	96	62	61	91	40	56	87	42
TOTAL UNCLASSIFIED	1	10	0	2	5	0	1	10	0	0	0	0	1	5	0	0	0	0
BIOLOGY -- NON-EDUC.	12	80	0	19	76	0	9	67	0	18	80	0	9	18	5	4	16	0
¤ -- EDUCATION	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	12	80	0	19	76	0	9	70	0	18	80	0	9	18	5	4	16	0
OTHER SCIENCES -- NON-EDUC.	28	107	0	29	93	0	24	86	0	46	107	17	11	35	0	26	74	0
¤ -- EDUCATION	1	10	0	0	0	0	0	0	0	2	10	0	0	0	0	1	3	0
¤ -- TOTAL	29	107	0	29	93	0	24	86	0	48	107	17	11	35	0	27	74	0
FOR. LANG/COMM -- NON-EDUC.	11	85	0	21	85	0	11	19	3	8	20	0	10	26	5	5	10	3
¤ -- EDUCATION	0	5	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
¤ -- TOTAL	11	85	0	21	85	0	11	19	3	9	20	0	10	26	5	5	10	3
EDUCATION DEPARTMENTS TOTAL	46	75	22	32	37	22	46	70	39	58	75	50	42	57	32	42	72	31
ENGLISH -- NON-EDUC.	11	26	4	11	15	4	11	16	5	11	26	5	8	11	5	14	25	4
¤ -- EDUCATION	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0
¤ -- TOTAL	11	27	4	11	15	4	11	16	5	11	26	5	8	11	5	15	27	4
OTHER HUMANITIES- NON-EDUC.	13	141	0	11	24	5	21	141	0	13	30	0	6	12	0	10	15	5
¤ -- EDUCATION	0	5	0	1	3	0	1	5	0	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	13	146	0	12	24	5	21	146	0	13	30	0	6	12	0	10	15	5
HISTORY -- NON-EDUC.	5	27	0	4	10	0	2	5	0	6	15	0	9	27	0	7	15	0
¤ -- EDUCATION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
¤ -- TOTAL	5	27	0	4	10	0	2	5	0	6	15	0	9	27	0	7	15	0
OTHER SOCIAL SCI- NON-EDUC.	24	137	8	20	25	12	21	36	10	32	137	8	17	23	9	30	55	15
¤ -- EDUCATION	3	10	0	8	10	4	0	3	0	1	5	0	0	0	0	9	10	7
¤ -- TOTAL	27	142	8	27	33	22	21	39	10	33	142	8	17	23	9	39	62	25
MATHEMATICS -- NON-EDUC.	53	124	15	51	65	31	60	86	15	50	124	23	44	59	29	59	107	38
¤ -- EDUCATION	7	14	0	7	14	0	6	13	0	10	12	0	4	8	0	4	8	0
¤ -- TOTAL	59	124	15	58	72	39	66	94	15	60	124	33	49	64	29	63	107	38
OTHER FIELDS -- NON-EDUC.	20	95	0	19	34	3	15	35	2	12	71	0	42	95	5	15	42	5
¤ -- EDUCATION	4	35	0	1	3	0	3	14	0	1	15	0	15	35	2	0	0	0
¤ -- TOTAL	24	124	0	20	35	3	18	44	3	14	86	0	57	124	8	15	42	5

Table E-10:QUARTER HOURS TAKEN BY SECONDARY SOCIAL SCI. TEACHERS;

	ALL INSTITUTIONS			INSTITUTION														
				CWU			EWU			UW			WSU			WWU		
	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW	AVG	HIGH	LOW
TOTAL	236	360	182	224	322	184	229	324	182	247	360	189	234	329	183	248	338	194
TOTAL NON-EDUCATION	177	281	108	180	281	142	168	265	108	192	276	139	170	249	115	191	252	137
TOTAL EDUCATION	55	104	32	43	49	32	60	104	38	56	84	37	64	96	40	57	86	39
TOTAL UNCLASSIFIED	0	11	0	1	4	0	0	6	0	0	0	0	0	11	0	0	5	0
BIOLOGY -- NON-EDUC.	8	32	0	6	14	0	9	31	0	7	19	0	11	32	5	5	18	0
" -- EDUCATION	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
" -- TOTAL	8	32	0	6	14	0	9	31	0	7	19	0	11	32	5	5	18	0
OTHER SCIENCES -- NON-EDUC.	8	54	0	5	15	0	8	54	0	10	35	0	7	18	0	9	17	0
" -- EDUCATION	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
" -- TOTAL	8	54	0	5	15	0	8	54	0	10	35	0	7	18	0	9	17	0
FOR. LANG/COMM -- NON-EDUC.	15	117	0	10	24	0	14	87	0	23	117	0	14	95	3	16	77	0
" -- EDUCATION	0	5	0	0	0	0	0	0	0	0	3	0	0	5	0	1	4	0
" -- TOTAL	16	117	0	10	24	0	14	87	0	24	117	0	14	100	3	17	81	0
EDUCATION DEPARTMENTS TOTAL	46	88	22	34	39	22	47	70	35	55	81	23	45	88	33	47	84	30
ENGLISH -- NON-EDUC.	16	74	0	11	31	5	21	66	5	16	74	3	16	59	0	12	49	3
" -- EDUCATION	1	14	0	0	0	0	1	4	0	0	0	0	1	14	0	1	4	0
" -- TOTAL	17	74	0	11	31	5	22	70	5	16	74	3	17	73	0	12	53	3
OTHER HUMANITIES- NON-EDUC.	12	74	0	16	42	5	11	33	0	12	44	0	8	26	0	19	74	5
" -- EDUCATION	0	5	0	0	0	0	0	5	0	0	0	0	0	3	0	0	0	0
" -- TOTAL	12	74	0	16	42	5	12	33	0	12	44	0	8	26	0	19	74	5
HISTORY -- NON-EDUC.	34	106	0	48	78	33	29	73	0	42	70	10	29	60	0	40	106	8
" -- EDUCATION	1	5	0	1	2	0	0	0	0	0	0	0	2	5	0	0	0	0
" -- TOTAL	35	106	0	49	78	33	29	73	0	42	70	10	30	65	0	40	106	8
OTHER SOCIAL SCI- NON-EDUC.	48	138	8	51	105	13	39	108	8	64	138	13	39	135	9	64	101	26
" -- EDUCATION	2	10	0	7	9	4	0	3	0	0	3	0	0	0	0	7	10	0
" -- TOTAL	50	138	8	58	109	21	39	108	8	65	138	13	39	135	9	71	111	35
MATHEMATICS -- NON-EDUC.	5	50	0	4	10	0	5	20	0	5	20	0	7	50	0	5	11	0
" -- EDUCATION	0	15	0	0	0	0	1	15	0	0	3	0	1	9	0	0	0	0
" -- TOTAL	6	55	0	4	10	0	6	25	0	5	20	0	8	55	0	5	11	0
OTHER FIELDS -- NON-EDUC.	29	98	0	30	89	4	34	98	0	11	48	0	39	90	0	20	76	0
" -- EDUCATION	8	54	0	1	7	0	11	54	0	1	14	0	15	39	0	1	16	0
" -- TOTAL	37	138	0	31	96	4	45	138	0	12	62	0	55	125	3	21	79	0

Table E-11

```
                              DISTRIBUTIONS OF WPCT SCORES
                              NUMBER WITH EACH SCORE=VERBAL

                                  FREQUENCY BAR CHART
MIDPOINT
 SCORE                                                        FREQ   CUM.   PERCENT      CUM.
                                                                     FREQ             PERCENT
      |
  20  |                                                          0      0      0.00      0.00
  21  |                                                          0      0      0.00      0.00
  22  |                                                          0      0      0.00      0.00
  23  |                                                          0      0      0.00      0.00
  24  |                                                          0      0      0.00      0.00
  25  |                                                          0      0      0.00      0.00
  26  |X                                                         1      1      0.10      0.10
  27  |X                                                         1      2      0.10      0.21
  28  |X                                                         1      3      0.10      0.31
  29  |X                                                         1      4      0.10      0.41
  30  |XXX                                                       3      7      0.31      0.72
  31  |XXXXXX                                                    6     13      0.62      1.34
  32  |XX                                                        2     15      0.21      1.54
  33  |XXXXXXXXX                                                 9     24      0.92      2.47
  34  |XXXXXXXXXX                                               10     34      1.03      3.49
  35  |XXXXXXXXXXXXXX                                           14     48      1.44      4.93
  36  |XXXXXXXXXXXXXXXXX                                        17     65      1.75      6.68
  37  |XXXXXXXXXXXXXXX                                          15     80      1.54      8.22
  38  |XXXXXXXXXXXXXXXXXXXXXXXX                                 24    104      2.47     10.69
  39  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                           30    134      3.08     13.77
  40  |XXXXXXXXXXXXXXXXXXXXXXXX                                 24    158      2.47     16.24
  41  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                   38    196      3.91     20.14
  42  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                41    237      4.21     24.36
  43  |XXXXXXXXXXXXXXXXXXXXXXXXXXXX                             28    265      2.88     27.24
  44  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                         32    297      3.29     30.52
  45  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                  39    336      4.01     34.53
  46  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX     52    388      5.34     39.88
  47  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                   38    426      3.91     43.78
  48  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                  39    465      4.01     47.79
  49  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     36    501      3.70     51.49
  50  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                  39    540      4.01     55.50
  51  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                           30    570      3.08     58.58
  52  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                   38    608      3.91     62.49
  53  |XXXXXXXXXXXXXXXXXXXXXXXXXX                               26    634      2.67     65.16
  54  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                        33    667      3.39     68.55
  55  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     36    703      3.70     72.25
  56  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                       34    737      3.49     75.75
  57  |XXXXXXXXXXXXXXXXXXXXXXXXXXX                              27    764      2.77     78.52
  58  |XXXXXXXXXXXXXXXXXXXXX                                    21    785      2.16     80.68
  59  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                        33    818      3.39     84.07
  60  |XXXXXXXXXXXXXXXXXXXXXXXXXXXXX                            29    847      2.98     87.05
  61  |XXXXXXXXXXXXXXXXXXXXXXXX                                 24    871      2.47     89.52
  62  |XXXXXXXXXXXXXXXXXXXXX                                    21    892      2.16     91.68
  63  |XXXXXXXXXXXXXXXXXXX                                      19    911      1.95     93.63
  64  |XXXXXXXXXXXXXX                                           14    925      1.44     95.07
  65  |XXXXXXXXXXXXXX                                           14    939      1.44     96.51
  66  |XXXXXX                                                    6    945      0.62     97.12
  67  |XXXXXX                                                    6    951      0.62     97.74
  68  |XXXXXXXXX                                                 9    960      0.92     98.66
  69  |XXXXXX                                                    6    966      0.62     99.28
  70  |XXXX                                                      4    970      0.41     99.69
  71  |X                                                         1    971      0.10     99.79
  72  |XX                                                        2    973      0.21    100.00
```

Table E-12

```
                         DISTRIBUTIONS OF WPCT SCORES
                      NUMBER WITH EACH SCORE=QUANTITATIVE

                              FREQUENCY BAR CHART
MIDPOINT
 SCORE                                                                 FREQ  CUM.   PERCENT    CUM.
                                                                             FREQ             PERCENT
         |
  20     |                                                               0     0     0.00      0.00
  21     |                                                               0     0     0.00      0.00
  22     |                                                               0     0     0.00      0.00
  23     |                                                               0     0     0.00      0.00
  24     |                                                               0     0     0.00      0.00
  25     |                                                               0     0     0.00      0.00
  26     |                                                               0     0     0.00      0.00
  27     |XXX                                                            3     3     0.31      0.31
  28     |XXX                                                            3     6     0.31      0.62
  29     |X                                                              1     7     0.10      0.72
  30     |XXXXXX                                                         6    13     0.62      1.34
  31     |XXXXXXX                                                        7    20     0.72      2.06
  32     |XXXXXXXXXXX                                                   11    31     1.13      3.19
  33     |XXXXX                                                          5    36     0.51      3.70
  34     |XXXXXXXXXXX                                                   11    47     1.13      4.83
  35     |XXXXXXXXXXXXXXXXXX                                            18    65     1.85      6.68
  36     |XXXXXXXXXXXXXXXXXXXXXXXX                                      24    89     2.47      9.15
  37     |XXXXXXXXXXXXXXXXXXX                                           19   108     1.95     11.10
  38     |XXXXXXXXXXX                                                   11   119     1.13     12.23
  39     |XXXXXXXXXXXXXXXXXXXXXXXXXX                                    26   145     2.67     14.90
  40     |XXXXXXXXXXXXXXXXXXXX                                          20   165     2.06     16.96
  41     |XXXXXXXXXXXXXXXXXXXXXXXXXX                                    26   191     2.67     19.63
  42     |XXXXXXXXXXXXXXXXXXXXXX                                        22   213     2.26     21.89
  43     |XXXXXXXXXXXXXXXXXXXXX                                         21   234     2.16     24.05
  44     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXX                                 29   263     2.98     27.03
  45     |XXXXXXXXXXXXXXXXXXXXXXXXXX                                    26   289     2.67     29.70
  46     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                         37   326     3.80     33.50
  47     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                       39   365     4.01     37.51
  48     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                        38   403     3.91     41.42
  49     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                            34   437     3.49     44.91
  50     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                      40   477     4.11     49.02
  51     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                         37   514     3.80     52.83
  52     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                46   560     4.73     57.55
  53     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                              32   592     3.29     60.84
  54     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                    42   634     4.32     65.16
  55     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                         37   671     3.80     68.96
  56     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                          36   707     3.70     72.66
  57     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                      40   747     4.11     76.77
  58     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                                30   777     3.08     79.86
  59     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                                30   807     3.08     82.94
  60     |XXXXXXXXXXXXXXXXXXXXXXXXXX                                    26   833     2.67     85.61
  61     |XXXXXXXXXXXXXXXXXXXXXXXXXXXXX                                 29   862     2.98     88.59
  62     |XXXXXXXXXXXXX                                                 13   875     1.34     89.93
  63     |XXXXXXXXXXXXXXXXXXXXX                                         21   896     2.16     92.09
  64     |XXXXXXXXXXXXXXX                                               15   911     1.54     93.63
  65     |XXXXXXXXXXXXXXXXX                                             17   928     1.75     95.38
  66     |XXXXXXXXXXXXX                                                 13   941     1.34     96.71
  67     |XXXXXXXXXXXXXXXXX                                             17   958     1.75     98.46
  68     |XXXXXX                                                         6   964     0.62     99.08
  69     |XXXXX                                                          5   969     0.51     99.59
  70     |XX                                                             2   971     0.21     99.79
  71     |XX                                                             2   973     0.21    100.00
```